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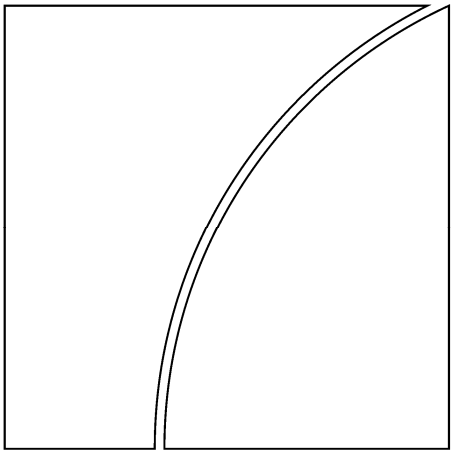

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Currency internationalisation: lessons from the global financial crisis and prospects for the future in Asia and the Pacific

Proceedings of a joint conference organised by the
BIS and the Bank of Korea in Seoul on 19–20 March 2009

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Foreword

Since its launch in September 2006, the Asian Research Programme has focused on policy-oriented studies for central banks and supervisory authorities in the Asia-Pacific region. Under the programme, the BIS Representative Office for Asia and the Pacific has co-organised a series of conferences, seminars and workshops with central banks and supervisory authorities in Asia and the Pacific. The subjects of interest have included improving monetary policy and operations, developing financial markets, maintaining financial stability and strengthening prudential policy.

On 19–20 March 2009, the BIS Asian Office and the Bank of Korea co-hosted a high-level seminar on currency internationalisation in Seoul. Participants from 12 central banks as well as academic scholars and BIS economists attended the seminar. The purpose of the seminar was to review experiences of economies in the Asia-Pacific region with currency internationalisation and to assess the prospects for further internationalisation, emphasising the policy implications facing central banks if current trends continue. Lessons learned about currency internationalisation since the intensification of the strains in global markets in mid-2007 were also discussed. This volume is a collection of the speeches, presentations and papers from the seminar.

Programme

Wednesday 18 March

19:00	Welcome dinner hosted by Eli Remolona, Chief Representative, BIS Asian Office

Thursday 19 March

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	Már Gudmundsson, Deputy Head, Monetary and Economics Department, BIS
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Paper 1	***Issues regarding currency internationalisation*** Peter Kenen, Professor Emeritus, Princeton University
Paper 2	***Motivations for swap-covered foreign currency borrowing*** Anella Munro and Philip Wooldridge, Senior Economists, BIS Asian Office
Session 2	**Perspectives from Europe and Japan**
10:45–12:00	Chair: Akinari Horii, Assistant Governor, Bank of Japan
Paper 3	***The euro: internationalised at birth*** Frank Moss, Director General, International Relations, ECB
Paper 4	***Internationalisation of the yen*** Shinji Takagi, Professor, Osaka University
	Discussant: Robert McCauley, Senior Advisor, BIS
Session 3	**Prospects for the renminbi**
13:30–14:45	Chair: Ric Battellino, Deputy Governor, Reserve Bank of Australia
Paper 5	***Internationalisation of the renminbi*** Yongding Yu and Haihong Gao, Chinese Academy of Social Sciences
Paper 6	***The potential of the renminbi as an international currency: what we can learn from international experience*** Wensheng Peng, Head of China Research, Barclays Capital Hongyi Chen, Senior Manager, Hong Kong Institute for Monetary Research Chang Shu, Senior Manager, Hong Kong Monetary Authority
	Discussant: Frank Song, Professor, School of Economics and Finance, University of Hong Kong

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Paper 8	***The Singapore dollar's evolution away from non-internationalisation*** Luke Goh, Deputy Director and Head, Reserve and Monetary Management, Monetary Authority of Singapore
	Discussant: Atchana Waiquamdee, Deputy Governor, Bank of Thailand
Session 5	**The regional dimension**
16:15–17:00	Chair: Kyungsoo Kim, Deputy Governor, Bank of Korea
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	Discussant: Rizal A Djaafara, Director of the Center for Banking Education and Studies, Bank Indonesia
17:00–17:15	Wrap-up of day one
19:00	Conference dinner hosted by Seongtae Lee, Governor, Bank of Korea

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Session 6	**Monetary policy challenges with an internationalised currency**
09:00–10:15	Chair: Do-Soung Choi, Member of the Monetary Policy Committee, Bank of Korea
Paper 10	***An internationalised rupee?*** Shyamala Gopinath, Deputy Governor, Reserve Bank of India
Paper 11	***A generation of an internationalised Australian dollar*** Ric Battellino, Deputy Governor, Reserve Bank of Australia
	Discussant: Diwa Guinigundo, Deputy Governor, Bangko Sentral ng Pilipinas

Friday 20 March (cont)

Session 7	**Panel discussion: lessons from the crisis and prospects for the future**
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	Panellists: Akinari Horii, Assistant Governor, Bank of Japan Gwang-Ju Rhee, Deputy Governor, Bank of Korea Grant Spencer, Deputy Governor, Reserve Bank of New Zealand Dato' Ooi Sang Kuang, Deputy Governor, Bank Negara Malaysia
12:25–12:40	Wrap-up
12:45–14:00	Lunch
	End

List of meeting participants

Australia	Reserve Bank of Australia
	Ric Battellino Deputy Governor
	Crystal Ossolinski (Ms) Manager, Market Analysis International Department
China	Chinese Academy of Social Sciences
	Yu Yongding Director, Institute of World Economics and Politics
Europe	European Central Bank
	Frank Moss Director General, International and European Relations
Hong Kong SAR	Hong Kong Monetary Authority
	Hans Genberg Executive Director
	Barclays Capital
	Wensheng Peng Head of China Research
	University of Hong Kong
	Frank Song Professor, School of Economics and Finance
India	Reserve Bank of India
	Shyamala Gopinath (Mrs) Deputy Governor
	Charan Singh Director, Department of Economic Analysis and Policy
	Surajit Bose Assistant General Manager, Department of External Investments and Operations
Indonesia	Bank Indonesia
	Rizal A Djaafara Director of Center for Banking Education and Studies
	Eni V Panggabean (Mrs) Head of Bureau, Directorate of Reserve Management
	Bistok Simbolon Senior Financial Analyst, Directorate of Reserve Management

Japan	Bank of Japan
	Akinari Horii Assistant Governor
	Osaka University
	Shinji Takagi Professor, Graduate School of Economics
Korea	Bank of Korea
	Do-Soung Choi Member of the Monetary Policy Committee
	Gwang-Ju Rhee Deputy Governor
	Kyung-Soo Kim Deputy Governor
	Keun-Man Yook Director General, International Relations Office
	Young-Kyung Suh (Ms) Deputy Director-General Institute for Monetary and Economic Research
	Korea University
	Yung-Chul Park Distinguished Professor, Division of International Studies
	Kwanho Shin Professor, Department of Economics
Malaysia	Central Bank of Malaysia
	Dato' Ooi Sang Kuang Deputy Governor
	Sukudhew Singh Assistant Governor
	Sarifaah Naziha Syed Abdullah Acting Deputy Director, Foreign Exchange Administration
	Albert Choon Kwang See Acting Deputy Director, Economics
New Zealand	Reserve Bank of New Zealand
	Grant Spencer Deputy Governor
Philippines	Bangko Sentral ng Pilipinas
	Diwa Guinigundo Deputy Governor
	Vic K Delloro Bank Officer, Center for Monetary and Financial Policy
	Aries Gamboa Acting Assistant Manager, International Department

Singapore	Monetary Authority of Singapore **Luke Goh** Deputy Director and Head, Reserve and Monetary Management
Thailand	Bank of Thailand **Atchana Waiquamdee (Mrs)** Deputy Governor **Akkharaphol Chabchitrchaidol** Senior Economist, Monetary Policy Group
United States	Princeton University **Peter Kenen** Professor Emeritus, Department of Economics
BIS	Bank for International Settlements, Basel **Már Gudmundsson** Deputy Head, Monetary and Economics Department **Robert McCauley** Senior Advisor Representative Office for Asia and the Pacific **Eli Remolona** Chief Representative **Andrew Filardo** Head of Economics for Asia and the Pacific **James Yetman** Senior Economist **Philip Wooldridge** Senior Economist

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Panel discussion

Introduction

Andrew Filardo and James Yetman

This volume is a collection of the speeches, presentations and papers from a high-level seminar on "Currency internationalisation: lessons from the global financial crisis and prospects for the future in Asia and the Pacific". The event was co-hosted by the Bank of Korea (BoK) and the Bank for International Settlements (BIS), and was held on 19–20 March 2009 in Seoul, Korea. Officials from 12 central banks, as well as academic scholars and BIS economists, attended the seminar. The formal addresses included speeches by Sungil Lee, Senior Deputy Governor of the BoK, and Már Gudmundsson, Deputy Head of the Monetary and Economic Department of the BIS.

The conference came under the auspices of the BIS Asian Research Programme (www.bis.org/arp). From September 2006 to August 2009, the Asian Research Programme focused on policy-oriented studies of topics of interest to central banks and supervisory authorities in Asia and the Pacific, and co-organised a series of conferences, seminars and workshops in the region. The objectives of the three-year programme were to contribute to a better understanding of the policy challenges and to leave a lasting research footprint for the BIS in the region. Topics of interest included improving monetary policy and operations, developing financial markets, maintaining financial stability and strengthening prudential policy.

The purpose of this seminar was to review experiences of economies in the Asia-Pacific region with currency internationalisation and to assess the prospects for further internationalisation, emphasising the policy implications facing central banks if current trends continue. Lessons learned about currency internationalisation since the intensification of the strains in global markets in mid–2007 were also discussed.

Summary of the conference papers

The seminar began with a presentation that laid out a conceptual framework for thinking about currency internationalisation. This was followed by presentations on the experiences of different economies from the region as well as the euro area. These experiences varied widely, with some economies having highly internationalised currencies while others were relatively insular, although most presenters viewed an increasing degree of internationalisation as largely inevitable and generally beneficial. The conference then concluded with a panel discussion on the lessons from the crisis for currency internationalisation, and prospects for the future.

Current issues in currency internationalisation

In the first presentation of the first session, Professor Peter Kenen (Princeton University) provided a conceptual framework for thinking about currency internationalisation. He laid out the dimensions, process, and costs and benefits together with the extent of internationalisation in Asia. His presentation stressed the distinctions between financial liberalisation, international financial centres and currency internationalisation, and interactions between internationalisation and the development of the domestic financial system.

Next, Anella Munro (now Reserve Bank of New Zealand) and Philip Wooldridge (BIS) explored the motivations for borrowers to raise funds in a currency unrelated to their operations and swap the proceeds into the desired currency, instead of borrowing the desired currency directly. They found that the characteristics of foreign currency bonds issued by residents and local currency bonds issued by non-residents differ in ways consistent with these issuers arbitraging cost differentials.

Perspectives from Europe and Japan

Focused discussion of different individual economies' experiences with currency internationalisation began in the second session. Frank Moss (European Central Bank) argued that the euro was born as an international currency, based on the international role of its predecessors. He then discussed the evolution of this role during the first 10 years of EMU, and the impact of the global financial crisis.

Shinji Takagi (Osaka University) then reviewed the experience of Japan with its attempt to internationalise its currency from 1984 to 2003, and the relative success of different government policies in achieving this objective.

Prospects for the renminbi

In contrast to the previous cases, China represents a major economy with a relatively non-internationalised currency. Yongding Yu and Haihong Gao (Chinese Academy of Social Sciences) argued that China's increasing economic integration and over-reliance on the US dollar raises the prospects for renminbi internationalisation.

Wensheng Peng (then Barclays Capital, now CICC), Hongyi Chen (Hong Kong Institute for Monetary Research) and Chang Shu (Hong Kong Monetary Authority) followed by suggesting that the renminbi already plays a significant role in terms of its impact on the exchange rates of the Asian currencies, and that its role will grow with increasing convertibility.

Progress towards internationalisation

Kyungsoo Kim and Young Kyung Suh (Bank of Korea) argued that the international use of the won has been insignificant so far, but that this did not protect Korea from the international financial crisis. However, increased internationalisation may reduce the effectiveness of monetary policy and hinder the stabilisation of the domestic capital market going forward.

Luke Goh (Monetary Authority of Singapore – paper not available) characterised the Singapore experience as an evolutionary path away from explicit non-internationalisation to allowing an increasing range of international transactions in Singapore dollars.

The regional dimension

Yung Chul Park and Kwanho Shin (Korea University) argued that full convertibility of both the current and capital accounts is necessary but not sufficient for currency internationalisation, and examined the implications of currency internationalisation in East Asia for monetary and financial integration.

Monetary policy challenges with an internationalised currency

Shyamala Gopinath (Reserve Bank of India – paper not available) suggested that the degree of internationalisation should be interpreted as an indicator of the confidence that the global economy has in the economy of the issuing country. Currently the rupee plays only a limited role internationally, mainly in economies in India's immediate vicinity, although this is likely to grow with the size of the economy.

Ric Battellino (Reserve Bank of Australia) described the internationalisation of the Australian dollar, beginning with the floating of the currency and removal of capital controls in 1983, and discussed the extent to which the Australian dollar is now internationalised. He then discussed the implications of this for financial markets, the conduct of monetary policy, the balance of payments and financial stability.

Panel discussion: Lessons from the crisis and prospects for the future

In the final session, a paper presented by Hans Genberg (Hong Kong Monetary Authority) provided the backdrop to a panel discussion on lessons from the crisis and prospects for the future. He started by recalling briefly the main features, benefits and costs of currency internationalisation and argued that some alleged benefits are not as self-evident as they might at first appear. He then addressed the role for policy to promote the international use of a currency, how many international currencies there could be and the possible role for regional currencies.

Opening remarks

Sung-il Lee[1]

Ladies and gentlemen

I am pleased to sincerely welcome the distinguished senior central bank officials and academics gathered here today, from around the world, to take part in this week's BoK/BIS seminar on currency internationalisation.

Let me also take this opportunity to express my deep gratitude to Mr Eli Remolona, Chief of the BIS Representative Office for Asia and the Pacific, who planned this seminar and has given us his unstinting advice and cooperation. I would also like to give special thanks to our renowned Professor Emeritus Peter Kenen of Princeton University, whose very valuable ideas we will be able to share a few minutes from now through teleconferencing.

It is a fact that there has been a wide range of discussions concerning currency internationalisation for a long time. A clear presentation has not yet been made, however, on the economic effects of currency internationalisation, or on a desirable method for promoting it, taking into account the particular characteristics of individual countries.

In the current situation, in which a financial crisis in advanced economies is spreading rapidly and with very great force to emerging economies as a result of financial globalisation, I believe that there must be some differences from the past, both in terms of the benefits of currency internationalisation and its limitations.

Therefore, I think it is highly meaningful that we are all gathered here now to discuss a variety of issues concerning currency internationalisation and the experiences of major countries in this regard.

The benefits of currency internationalisation can be listed as the following: the generation of seigniorage; the lowering of economic agents' exchange rate risk; the cutting of exchange costs in external transactions; and the reduced necessity for holding external reserves.

In light of all these perceived benefits of currency internationalisation, we may infer that the negative impact of the current international crisis on emerging market economies would be substantially reduced if internationalisation of their individual currencies could be advanced.

In Korea, for example, the difficulties arising from currency mismatches would be considerably less if the Korean won were internationalised and could be used in part for settlement of our external transactions.

Having said this, I should point out the existence of several practical difficulties for emerging market economies hoping to internationalise their currencies.

There must be adequate international demand for the currency in question if the country wishes to pursue its internationalisation. For the generation of such demand, however, it is first necessary to secure credibility of the currency's exchange value.

This, in turn, requires the achievement of sustained macroeconomic stability, the development of financial and foreign exchange markets and the upgrading of financial regulations and supervision. It is, however, no easy matter for emerging market economies to fulfil all these requirements.

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[1] Senior Deputy Governor, the Bank of Korea.

Furthermore, if currency internationalisation is driven forward hastily, in a situation in which the international credibility of the particular currency concerned is not yet high, there may be frequent episodes of financial unrest due to inflows and outflows of short-term speculative capital.

Putting all of this together, I believe it is desirable for the internationalisation of emerging market currencies to be pursued from a medium- and long-term perspective. The path to follow involves expanding the international use of the currency in question after having first ensured the strength of the country's financial and economic fundamentals.

Looking at the route of propagation of the current financial crisis, we find that emerging market countries, and likewise the majority of advanced countries, were not immune from the shocks generated by the US subprime mortgage meltdown.

In today's globalised financial world, a panic arising in any one country is rapidly spread worldwide, which suggests that the financial stability effect of currency internationalisation has inevitably been constrained.

It follows that, to overcome the present global financial crisis and avoid its future recurrence, a variety of things are essential. Apart from the efforts of individual countries themselves for currency internationalisation and so forth, we also need to further strengthen currency and financial cooperation among nations.

For Korea, our currency swap agreements with the US Federal Reserve, the People's Bank of China and the Bank of Japan are assessed as having contributed greatly to foreign exchange market stability here. This, in turn, has served to spur heightened recognition of the importance of currency cooperation among countries.

In the future, Korea will seek to strengthen international policy coordination through its participation in the IMF, the BIS, the G20 and other international forums. At the same time, we plan to strive energetically for development of a framework for regional currency and financial cooperation in Asia and the Pacific, including the Chiang Mai Initiative.

We will, I believe, in the course of this seminar, hear presentations of many constructive and creative ideas concerning currency internationalisation. I anticipate that the discussions here this week will be of great help to us as we seek to overcome the shock of the global financial crisis on the countries of the Asia-Pacific region.

Drawing to the end of my remarks, I should like to once again voice my deep thanks to all those of you who have set aside your precious time at this critical period to take part in this week's seminar. And although your time in Korea will, I know, be short, I want to wish you all a very interesting and enjoyable stay.

Thank you.

Opening remarks

Már Gudmundsson[1]

Senior Deputy Governor Lee, dear colleagues, ladies and gentlemen

On behalf of the BIS, it gives me great pleasure to welcome you all to this seminar on currency internationalisation. We have organised the seminar jointly with our host here today, the Bank of Korea. I would like to express our deep gratitude to the Bank of Korea for the cooperation and the excellent arrangements they have put in place, especially Director General Yook and his team, but also Deputy Governors Rhee and Kim for their support and contribution to the programme. I would also like to thank my colleagues from the BIS Representative Office for Asia and the Pacific, Eli and Andy and their team, who have organised the event on our side. Professor Yung Chul Park and Bob McCauley also deserve credit. They got the ball rolling when Bob was still the BIS Chief Representative in the region.

As we told you when we invited you to this seminar, its purpose is to review experiences of economies with internationalised currencies in the Asia-Pacific region and to assess the prospects for further internationalisation. But we also asked the speakers to reflect on what they have learned about currency internationalisation since the outbreak of the international financial crisis. However, these are early days and it might be premature to expect us to be able draw the relevant key lessons in this seminar. First of all, the story is still being played out. We are in the process of collecting the data and analysing recent events. Secondly, and possibly more importantly, our vision might still be blurred by our pre-crisis views and assumptions, some of which might turn out to have been wrong.

Let me expand a bit on some of the questions that the crisis seems, to me, to have thrown up regarding internationalisation of currencies. In the immediate aftermath of the Lehman bankruptcy, cross-currency liquidity management of banks and other entities became very difficult as foreign exchange swap markets became severely impaired and there was a general scramble for dollar liquidity around the globe. The Lehman bankruptcy led to a major loss of confidence where concerns over protecting one's own solvency and liquidity led financial institutions around the globe to take action that, although rational from the standpoint of individual institutions, was disastrous for the system as a whole. Credit lines were closed, margin calls were made and all but the safest assets experienced fire sales. Emerging market assets experienced a sell-off as part of this process and funds were repatriated back to the United States in order to meet margin calls and repay debt.

In normal times, managing liquidity across currencies from countries with free movement of capital and relatively developed capital markets is not much of an issue. Foreign exchange swap markets can, in these conditions, be speedily used to change liquidity in one currency into another at spreads that closely reflect the differences in domestic money market rates in the two countries. In other words, the covered interest parity condition broadly holds. Vis-à-vis the US dollar, this relationship had shown periodic strain for most currencies since the financial turmoil broke out in late summer 2007, but broke down almost completely after the Lehman bankruptcy. There are probably several reasons for this, some of which have been analysed in BIS publications such as our *Quarterly Review*. Thus, for instance, we know that

[1] Már Gudmundsson was at the time of the conference the Deputy Head of the Economic and Monetary Department of the BIS but has since late August 2009 been the Governor of the Central Bank of Iceland.

European banks had, before the crisis, a structural imbalance where they had invested in longer maturity USD assets and financed them partly in USD interbank markets at shorter maturities. When these dried up, there was probably a scramble to get USD liquidity through foreign exchange swap markets with the result that they became dysfunctional as well.

This problem was significantly mitigated with the foreign exchange swap lines that the US Federal Reserve agreed with the ECB and other major central banks, especially after these became in some cases uncapped. But the problem was not confined to currency pairs involving the USD, and similar kinds of dynamics played out for smaller currencies in Europe vis-à-vis the euro, especially where banking systems had significant short-term foreign refinancing needs, or what can also be called rollover risk in terms of foreign currency. Similar stories can be told in this region.

In some cases, foreign exchange swap lines were granted vis-à-vis the dollar, the euro and the yen, and in some cases not. Where they were, it helped. And for some of the smaller players it might not have mattered that much which of the major international currencies they hooked onto in this sense, especially after the uncapped swap lines had been established.

In some sense, what we observed during this peak of the crisis was a run on cross-border banking operations. We know how to solve such problems domestically by letting central banks lend to markets and/or institutions through their almost unlimited short-run capacity to expand their domestic balance sheet. However, when it comes to foreign currency, your capacity to help banks to refinance the foreign liquidity that is being denied to them on the market is limited by the size of your reserves or the willingness of your big neighbour to help.

It seems to me that this experience raises several questions regarding the internationalisation of currencies, among which are the following:

1. What is the link between currency internationalisation and cross-border banking? It is clear, as pointed out by Professor Peter Kenen in his contribution to this seminar, that you can, in principle, have an international banking centre without having an internationalised currency. However, is that arrangement risky? In this regard, we have the extreme example of Iceland, where a cross-border banking system has collapsed, but it was built in a country whose currency could never become fully internationalised. However, it became partly internationalised for a while in the meaning that Hans Genberg gives to it in his paper, but has now been totally de-internationalised.

2. This raised the more general question of whether, as a consequence of the crisis and policy responses involving financial protectionism, we will see more widespread cases of de-internationalisation of currencies.

3. We have seen a kind of grading during the crisis. Cash is king, especially if it is USD cash. For a country in CEE, or Denmark, euro liquidity is almost as good. Does this mean that, even if it might be true in normal times that progress in payment technologies and such like makes it possible to have several fully internationalised currencies, at the time of reckoning we will always realise that they number less than four, even less than three, maybe less than two?

4. What does all this mean for the small- and medium-sized countries? Should they either encourage or at least not hinder the internationalisation of their currencies? Or is that risky, and should they rather consider whether to adopt an international currency through monetary union or to hook up with such a currency through some other means? What is the role of bilateral and multilateral foreign exchange swaps?

5. Finally, one of the underlying causes of the current crisis is the contradiction between globalised finance and national safety nets. If, as a result, banking retreats behind national borders, at least for a while, what might it mean for the

internationalisation of currencies? Or, put differently, what is the relationship between the global reach of your banking system and your currency?

Let us now get back to the agenda of the seminar. Even if we might not get a full grasp of the implication of the financial crisis, we will, in the course of the next day and a half, explore the issue of currency internationalisation from various angles through a line-up of excellent speakers. We will begin in the next session by getting a more general perspective of the issues involved. We will then proceed to analyse the cases of the euro and the yen before discussing the prospects for some of the other currencies in the region, in particular the renminbi, and the implications for regional cooperation. Tomorrow, we will first discuss some of the challenges for monetary policy of having an internationalised currency, and then discuss the lessons from the crisis and what the future might bring. I am very much looking forward to hearing what you have to say on all of these issues.

Thank you very much.

Currency internationalisation: an overview

Peter B Kenen[1]

Introduction

An international currency is one that is used and held beyond the borders of the issuing country, not merely for transactions with that country's residents, but also, and importantly, for transactions between non-residents. In other words, an international currency is one that is used instead of the national currencies of the parties directly involved in an international transaction, whether the transaction in question involves a purchase of goods, services or financial assets.

It is important in this context to distinguish between a country that is host to an international financial centre and one that has an international currency. Singapore is a major international financial centre: banks located there, including the affiliates of foreign banks, conduct international business for their clients and themselves, including currency trading. In fact, in terms of the volume of currency trading, Singapore ranked fifth among all countries in the most recent *BIS Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity*; its total foreign exchange turnover was exceeded only by those of the United Kingdom, the United States, Switzerland and Japan (BIS (2008)). For many years, however, the government of Singapore strongly discouraged use of the Singapore dollar as an international currency – one in which foreign entities may issue or trade securities.

Dimensions of internationalisation

An international currency is one that performs some if not all of several tasks. Consider, first, the invoicing of merchandise trade. Although some countries invoice large fractions of their exports in their own national currencies, many others do not. In 2007, for example, some 77% of US exports to Japan were invoiced in US dollars, but 72% of Asian exports to Japan were also invoiced in dollars, not in the Asian exporters' currencies, with almost all of the rest being invoiced in yen. Moreover, in that same year, 35% of EU exports to Japan were invoiced in euros, but 48% were invoiced in yen. Turning to Japan's exports, we find that 40% of its exports to Asian countries were invoiced in yen, with the bulk of the rest being invoiced in dollars. But the yen is far less heavily used in the invoicing of Japanese exports to the United States, where the dollar dominates, and it is used much less than the euro in invoicing Japanese exports to the European Union, where the euro is more heavily used. These numbers have been fairly stable for the last few years, save for the share of the euro in the invoicing of Japanese imports from the member countries of the European Union, which rose sharply in 2001, soon after the introduction of the single currency (though not at the expense of the yen, the dollar or the pound sterling).[2]

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[1] Walker Professor of Economics and International Finance *Emeritus*, Princeton University.

[2] See Papaioannou and Portes (2008), Table 5. Unfortunately, the table does not indicate which currencies lost shares to the euro in 2001. (They may perhaps have been invoiced in the currencies of individual euro area countries before the changeover to the euro, as the contracts involved may have been made before the changeover.)

There are, of course, exceptions to these patterns. Most importantly, exports of standardised commodities traded on organised exchanges are invoiced mainly in the currencies used on those exchanges, with petroleum being the most prominent example.

Consider, next, the issuance of bonds and other securities. Some such instruments are denominated in the issuer's currency, but many are denominated in the currency of the prospective buyer and, more importantly, many are issued in third countries' currencies. In all three cases, however, they may be held and traded outside the issuer's country. It is useful to distinguish three types of "international" securities.[3] Some are issued on foreign markets by domestic or foreign entities and are called eurobonds, even when they are not denominated in euros. Soon after the introduction of the euro, however, the volume of euro-denominated issues came to exceed the volume of dollar issues. These two types of securities are listed in panels (2) and (3) of Table 1. Other bonds are issued domestically by foreign entities and may be designed to attract foreign buyers (eg by exempting them from withholding taxes on the interest payments). They are listed in panel (4) of Table 1. They are called yankee bonds when issued in the United States, samurai bonds when issued in Japan, kangaroo bonds when issued in Australia, and panda bonds when issued in China (of which the first two were issued in 2005 by the International Finance Corporation and the Asian Development Bank, subject to a subsequent understanding that the renminbi proceeds would have to remain in China).

Table 1

How securities are issued

(1) Issued by and to domestic entities and traded domestically and internationally	(2) Issued by domestic entities to foreign entities and traded internationally
(3) Issued by and to foreign entities and traded internationally	(4) Issued domestically by foreign entities and traded domestically

NB: The issues listed in panels (1) and (4) are denominated in the currency of the country in which they are issued. Those listed in panels (2) and (3) may be issued in the borrower's currency if it is a widely traded currency but are typically issued in a major international currency such as the dollar or euro.

The process of internationalisation

A national currency can be regarded as an international currency if most of the following conditions hold. Note that the first condition is stated strongly, as a constraint on the government of the country under consideration, whereas the word "able" is used thereafter to convey a double meaning: that the government does not prohibit certain activities and that the relevant foreign parties, whether private or public, permit or facilitate the activity described. Note, further, that the conditions listed below need not be met simultaneously or abruptly. Some forms of internationalisation, such as the use of a country's currency for invoicing trade, including trade between third countries, are likely to grow gradually with the increase in the volume of trade and the use of a country's national currency in the invoicing of trade.

[3] This taxonomy draws on McCauley (2006), who traces the internationalisation of the Australian dollar.

First, the government must remove all restrictions on the freedom of any entity, domestic or foreign, to buy or sell its country's currency, whether in the spot or forward market. This condition clearly requires that the issuing country's government remove any restrictions on foreign exchange trading by domestic and foreign entities, as well as any limitations on the freedom of foreign entities to hold the domestic currency and derivative instruments denominated in it. This condition, however, need not require that the government abolish all restrictions on the freedom of domestic entities to hold foreign currency assets or to incur foreign currency debts, nor does it bar the country's financial regulators from limiting the long or short foreign currency positions of domestic financial institutions. Indeed, it may be necessary and appropriate for the regulators to keep a close watch on the size of the foreign currency positions of domestic banks.

Second, domestic firms are able to invoice some, if not all, of their exports in their country's currency, and foreign firms are likewise able to invoice their exports in that country's currency, whether to the country itself or to third countries. The extent to which they can actually do that, however, may be limited by the sorts of goods they export, the market power of individual firms, and conventions prevailing internationally, such as the use of organised markets for trading petroleum and other primary commodities.[4]

Third, foreign firms, financial institutions, official institutions and individuals are able to hold the country's currency and financial instruments denominated in it, in amounts that they deem useful and prudent. To the extent that foreign official institutions exercise this option on a significant scale, the country's currency will function as a reserve currency, but very few currencies are capable of playing that role on a significant scale. At mid-2008, the countries that report to the International Monetary Fund the currency composition of their official reserves held 62.5% of those reserves in dollars, 27.0% in euros, 4.7% in pounds sterling, and 5.7% in Swiss francs, yen and other currencies.[5]

Fourth, foreign firms and financial institutions, including official institutions, are able to issue marketable instruments in the country's currency. These may include both equity and debt instruments, not only in the country's domestic markets but also in foreign markets, including, of course, the foreign firms' own countries' markets. The volume of foreign issuance in the domestic market may, of course, be regulated by the country's government, as long as it does not discriminate against foreign issuers. If issued in the country's domestic markets, those instruments must, of course, conform to domestic law, and disputes must then be adjudicated in that country's domestic courts. If issued abroad, they must conform to the laws of the countries in which they are issued, and disputes must be adjudicated in those countries' courts.

Fifth, the issuing country's own financial institutions and non-financial firms are able to issue on foreign markets instruments denominated in their country's own currency. In that case, of

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[4] There is a large literature on this subject. See, for example, Bacchetta and van Wincoop (2005), Engel (2005) and Goldberg and Tille (2006). That literature, however, has focused mainly on optimal invoicing rather than actual practice, and has taken little account of the length of time that elapses between the placing of an export order and the payment date. When that interval is short, exchange rate risk can usually be hedged in the forward market at very low cost. When that interval is long, as is the case with custom-built goods, forward cover may not be available, and the risk of an exchange rate change in the interim may affect the participants' currency preferences. The importance of this matter is illustrated by the recent announcement by COSCO Corporation, a Chinese shipbuilding firm, that it will quote new contracts in renminbi (*Beijing Review*, 1 May 2008).

[5] The reporting of reserve composition is voluntary, and countries that do not report accounted for almost 38% of total currency reserves in mid-2008. (It may safely be inferred from the size of this percentage that China and some of the large oil-producing countries belong to that group.) The IMF's tabulation, moreover, does not include the currency composition of assets held by sovereign wealth funds.

course, those instruments must conform to the laws of the country in which they are issued, and disputes must then be adjudicated in that country's courts.

Sixth, international financial institutions, such as the World Bank and regional development banks, are able to issue debt instruments in a country's market and to use its currency in their financial operations. This may not directly benefit the country involved, although it will provide domestic financial institutions with a larger supply of highly rated securities.

Lastly, the currency may be included in the "currency baskets" of other countries, which they use in governing their own exchange rate policies. But that is also true of currencies that do not qualify as international currencies.

Currency internationalisation in Asia

Before assessing the benefits and costs of currency internationalisation, it is worth looking briefly at the extent of it in Asia. Table 2 uses a crude measure: the volume of cross-border spot foreign currency transactions reported by foreign exchange dealers and other domestic entities in each country. The first column lists their spot transactions with other countries' dealers, financial institutions and non-financial entities as a percentage of their total spot transactions, while the second column extracts the spot transactions of domestic dealers with the same three groups of foreign counterparties. Five countries stand out in the first column as doing most of their spot transactions with foreign entities: Singapore, Hong Kong, New Zealand, Australia and Japan. In those countries' spot markets, cross-border trades by domestic entities account for more than three quarters of all spot transactions. By contrast, in most of the other countries listed, cross-border transactions typically account for some 40% of all spot transactions, with Malaysia and Taiwan at the high end of this group and China at the very bottom. A similar pattern obtains with regard to cross-border transactions by dealers. Here, Singapore, New Zealand, Japan, and Hong Kong top the list, with Australia, Taiwan and Indonesia not very far behind.[6]

Yet the percentages in Table 2 cannot measure decisively the relative degree of currency internationalisation. The ranking of transactions with foreign counterparties, especially dealers' transactions, is bound to be affected by cross-country differences in patterns of payment for exports and imports of goods and services, even the volume of emigrants' remittances to family members left behind in their home countries.

[6] Although Japan ranks high in both columns of Table 2, whereas China ranks low, this paper pays scant attention to the internationalisation of the yen and much attention to the internationalisation of the renminbi. The first reason for this is that Japan's relative role in the world economy is apt to decline relative to that of China, partly for demographic reasons. The second is that most of the literature on the internationalisation of the yen was published several years ago, suggesting a decline in interest in the subject. Furthermore, the focus of Japan's economic diplomacy has come to rest on regional monetary cooperation in Asia, rather than the unilateral internationalisation of the Japanese currency. There is, by contrast, a rapidly growing literature on the internationalisation of the renminbi.

Table 2

Cross-border Spot Transactions by Domestic Entities

(percentages of total trading)

Country	All Domestic Entities	Domestic Dealers
Australia	76.1	79.3
China	2.3	0.0
Hong Kong	86.0	91.1
India	42.1	41.5
Indonesia	43.4	72.8
Japan	75.9	92.8
Korea	36.5	38.8
Malaysia	50.4	62.3
New Zealand	78.6	94.2
Philippines	18.0	94.1
Singapore	90.1	95.2
Taiwan	49.2	77.8
Thailand	42.6	66.3

Source: Based on data from the April 2007 BIS survey of foreign-exchange turnover.

The benefits of currency internationalisation

The benefits of currency internationalisation accrue largely to a country's private sector and are fairly obvious. Furthermore, they may be larger for a relatively small economy than for a large one. First, internationalisation gives the country's exporters an opportunity to limit exchange rate risk, and this benefit may be significant in the case of goods for which payment is made long after the goods are ordered.[7] Insofar as the internationalisation of their country's currency broadens and deepens the markets for it, domestic firms may be more readily able to invoice their exports in their own currency, thus shifting exchange rate risk to their foreign customers. Second, it permits domestic firms and financial institutions to access international financial markets without incurring exchange rate risk and to borrow more cheaply and on a larger scale than they can at home. Third, internationalisation offers new profit opportunities to private sector financial institutions, although this benefit may be offset in part by the entry of foreign financial institutions into the domestic financial market, to the extent that the government permits it. Finally, a larger, more profitable financial sector may better serve the domestic non-financial sector by reducing the cost of capital and widening the set of financial institutions that are willing and able to provide it.

The benefits to the public sector and to the public at large are less obvious. Currency internationalisation may, of course, allow a country's government to finance part or all of a

[7] See footnote 3 for a recent Asian example.

budget deficit by issuing domestic currency debt on international markets, rather than issuing foreign currency instruments. It may, likewise, allow a government to finance part, if not all, of a current account deficit without drawing down its official reserves. This benefit is not confined exclusively to reserve currency countries such as the United States, whose government debt is one of the principal reserve assets held by foreign central banks and governments. The issuance on international markets of private sector debt denominated in domestic currency can likewise finance part, or all, of a current account deficit.[8]

Some political scientists have argued that the international role of the dollar has greatly enhanced the international hegemony of the United States, and that the international role of the pound sterling has enhanced the political influence of the United Kingdom in an earlier era.[9] Their argument has emphasised the benefits conferred by reserve currency status and, in the case of the United States, its disproportionate influence on the policies and activities of international financial institutions, such as the International Monetary Fund. It is not clear, however, that the other dimensions of currency internationalisation have enhanced the political or economic influence of the United States, and it is even less clear that the prominent role of the City of London has enhanced the political or economic influence of the United Kingdom, apart from its influence on its own colonies.

The costs of currency internationalisation

There are three potential costs to the internationalisation of a country's currency. First, it is incompatible with the simultaneous pursuit of a fixed exchange rate and a domestically oriented monetary policy. Second, a country whose currency and domestic currency instruments are widely held abroad may suffer a large depreciation of its currency if foreign holders come to believe that the country's asset prices may fall sharply. Third, internationalisation may pose new risks to the domestic financial system due to the issuance of foreign debt to a country's residents.

The first cost is akin to what Robert Mundell once described as the "impossible trinity", by which he meant a fixed exchange rate combined with unfettered capital mobility and a domestically oriented monetary policy. Currency internationalisation does not necessarily involve the removal of all restrictions on capital movements; a government may continue to impose restrictions on residents' dealings in foreign currency instruments. Nevertheless, internationalisation broadens the scope for residents and non-residents to buy and sell domestic currency instruments, limiting the ability of the central bank to influence domestic interest rates and the domestic money supply by open market operations.

This limitation is not severe in the case of the United States or the euro area, where domestic markets for government debt are very large, even though foreign holdings are also large. It may be more severe in countries with smaller debt markets relative to the size of their real economies, and they may have to forgo the use of monetary policy to influence domestic economic activity or, alternatively, abandon exchange rate stabilisation. Hong Kong has adopted the first option: the Hong Kong Monetary Authority forgoes the use of monetary

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[8] Advocates of currency internationalisation sometimes cite seigniorage as a separate benefit of currency internationalisation. It arises in the international context when a government can issue debt on foreign markets below the interest rate it must pay on debt issued domestically, or when its banknotes are widely held abroad, giving the government what amounts to an interest-free loan. Thus, China earns seigniorage to the extent that renminbi notes circulate in neighbouring countries. But it is not likely to be a significant benefit, save in the case of dollar and euro banknotes, which are widely held and used abroad, often for illicit purposes such as drug trafficking.

[9] See, for example, Andrews (2006) and Cohen (2006); also Steil and Litan (2006).

policy to influence domestic economic activity – it exchanges unlimited quantities of Hong Kong dollars for US dollars at a firmly fixed exchange rate. Singapore has adopted the second option: the Singapore Monetary Authority relies on exchange rate changes to influence domestic economic activity, rather than relying on interest rate changes for that purpose.

The second cost is sadly familiar. A country whose domestic currency debt is widely held abroad, whether or not it was issued abroad, may suffer a large depreciation of its currency if foreign holders come to believe that the country's asset prices may fall sharply. They may sell their claims, then sell the proceeds of their sales in the foreign exchange market, causing the country's currency to depreciate. It is thus akin to the risk that arises when a country has a large foreign currency debt and its creditors come to believe that it will be unable to honour it because its foreign exchange reserves are too small – that is what happened to Thailand in 1997. Much may then depend on the way that a country with an international currency copes with a confidence problem, ie whether it allows its currency to depreciate when foreigners (and residents) reduce their holdings of domestic currency assets, or whether it holds foreign currency reserves large enough to limit the depreciation. In either case, however, foreign sales of domestic currency assets will depress their prices, and the country's domestic investors will suffer losses, even if the monetary authorities prevent the country's currency from depreciating. And the larger the foreign holdings of the country's domestic currency debt relative to the size of its financial market, the greater the potential harm to the country's domestic investors and to its domestic economy.

The third cost is the risk to the domestic financial system posed by the issuance of foreign debt to a country's own residents. This cost once seemed to be quite small but looms much larger now, as we count the cost to foreign investors of the financial tsunami that swept out from the shores of the United States in 2008, following the onset of the subprime mortgage crisis. The floating of domestic currency debt on foreign markets, one of the three forms of internationalisation listed in Table 1, may not do grave damage to the domestic financial system of the issuing country if the issuing entity defaults on its debt, although it may limit temporarily the ability of other domestic entities to issue debt to foreigners. But the issuance of foreign debt in a country's domestic market may inflict widespread damage when the issuing entity can no longer meet its obligations, even when the debt instruments involved are not widely held, because it may impair the holders' ability to meet their own obligations to other domestic financial institutions.

A fourth cost resembles the third but has broader macroeconomic implications. The issuance of foreign debt to a country's residents, as well as the issuance of domestic debt in foreign markets, may lead to more volatility in domestic interest rates and the exchange rate when global markets are hit hard by a financial crisis in a major country, even if the crisis is of lesser magnitude than the current financial crisis. There are, of course, many channels through which a crisis in a major economy is bound to affect other countries, but the internationalisation of a country's currency, whether it involves the issuance of foreign debt in a country's domestic markets or the issuance of domestic debt in foreign markets, will most certainly raise a country's vulnerability to external shocks manifest in international financial markets.

This appears to be happening to several emerging market countries that have issued foreign currency debt on international markets and, at the time of writing, are suffering sharp declines in their export earnings due to reductions in the volume and prices of their principal exports. They are likely to have grave difficulties servicing their external debts, and some may be forced to restructure those debts, including debts incurred by the private sector.

The debt crisis of the 1980s was due in large part to the inability of public sector debtors to service and repay their foreign currency debts to foreign banks. The Asian crisis of the late 1990s was due in large part to the inability of private sector debtors to service their foreign debts because their national governments had insufficient reserves. The current financial

crisis is affecting both public and private borrowers who have issued debt on international markets, and some of their countries are likely to require large-scale assistance from the International Monetary Fund and other bodies to meet their obligations. Some, indeed, have already done so.

A cautionary note may be in order here. A country with an international currency must make every effort to preserve it, as it can be hard to restore its role once it is impaired. In the years after the Second World War, New York was a major centre for the issuance of other countries' bonds. In 1963, however, the United States imposed a so-called Interest Equalization Tax on US purchases of foreign securities in order to limit capital outflows and reduce its balance of payments deficit. The unintended but long-lasting result was a migration of international bond issuance and trading from New York to London and thus a decline in the share of US financial institutions, which was not fully reversed thereafter. A country should not embark on the internationalisation of its currency and financial sector until it is confident that it can sustain its role in international financial markets.

Currency internationalisation and regional integration

There have been two collective attempts by East Asian countries to foster regional monetary integration: the Chiang Mai Initiative (CMI) of 2000 and the creation of two Asian Bond Funds (ABFs) in 2003 and 2004.

The CMI produced a network of bilateral currency swap agreements on which a participating country could draw if it encountered a balance of payments crisis. It is now in the process of multilateralisation, but a number of obdurate problems must be solved before that process is completed; they involve the governance of the swap network and the setting of the terms and conditions under which a participating country will be able to draw on the currency pool created by the multilateralisation of the swap agreements.

The two Asian Bond Funds can perhaps be viewed as modest multilateral steps towards currency internationalisation, although they were viewed primarily as measures to promote the integration of Asia's bond markets and thus compensate for the small size of the individual national markets.[10] The first was a USD 1 billion fund to be used for buying dollar-denominated bonds issued by Asian governments. The second established a set of bond funds to invest and trade in local currency bonds. Both have been described as learning exercises aimed at detecting and removing obstacles to the regional integration of national bond markets.[11] Regional integration, in turn, was seen as a way of compensating for the small size of those markets.

Yet regional integration is not likely to proceed fast or far in East Asia. Analogies with European economic integration are common but misleading. The ASEAN countries have not yet formed a fully fledged customs union, and they are even further from forming a single market of the European sort, involving the free movement of goods, capital and labour. There has been de facto integration in Asia, but it is Sino-centric, not mainly multilateral, involving bilateral trade between China and other Asian countries. Fully fledged integration of the European sort cannot take place, even among a subset of the ASEAN countries, unless and until those countries are willing and able to create supranational institutions of the sort that Europe began to create soon after the Second World War. The multilateralisation of the CMI

[10] On the small size of Asian bond markets and the reasons for it, see Eichengreen and Luengnaruemitchai (2004).

[11] See Ma and Remolona (2006).

may be a first tentative step in that direction, but only if the participating countries can agree to be bound by collective decisions rather than retaining the right to decide individually whether or not their countries' currencies can be used to assist another member country. When one looks beyond ASEAN, moreover, the prospects for fully fledged economic integration in East Asia become even dimmer.[12]

Achieving internationalisation

The obstacles to regional integration summarised above suggest that Asian countries can and should follow a different path, linking themselves individually to the global economy rather than focusing on regional integration, and currency internationalisation can play a role in that process, as it has for Australia and New Zealand.[13] In the mid-1970s, Australian borrowers began to issue bonds offshore denominated in Australian dollars, but the individual issues were relatively small and resembled private placements. The volume and size of the bond issues did not begin to grow until 1983, when Australia allowed its currency to float and dismantled its exchange controls. Furthermore, the issuers included foreign as well as Australian entities. In 2005, for example, the three largest issues were floated by the New South Wales Treasury, the World Bank and a Dutch bank. In recent years, moreover, foreign borrowers have issued bonds in the Australian market denominated in Australian dollars (the so-called kangaroo bonds).

It must be emphasised, however, that the success of Australia as an issuer of eurobonds and host to the issuance of foreign bonds in its domestic market was facilitated by the existence of a well developed foreign exchange market, including, importantly, a swap market. The size and quality of that market may owe much to Australia's role as an exporter of standardised commodities priced in US dollars.

Although other Asian countries do not have this helpful attribute, Hong Kong and Singapore have well developed financial and foreign exchange markets, and could come to serve as entrepôts for the floating and trading of bonds issued by other Asian countries, especially renminbi bonds issued by financial institutions and non-financial firms, much as Hong Kong and Singapore now serve as entrepôts for the merchandise trade of Asian countries. There is already a renminbi bond market in Hong Kong. The growth rate of activity in that market, however, will depend on the willingness of the Chinese government to give Chinese banks and other private sector borrowers unrestricted access to that market, and on the speed with which potential borrowers become more creditworthy than they are today.[14]

Conclusion

Internationalisation is not an inevitable consequence of financial liberalisation, nor can a government guarantee that the steps it takes to liberalise its country's capital account will lead inevitably to internationalisation. Yet internationalisation may be a spur to the strengthening of the domestic financial system and enrich the menu of financial assets available to domestic investors. It may also allow domestic firms and financial institutions to

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[12] The views expressed in this paragraph are developed more fully in Kenen and Meade (2008), Chapter 6.

[13] The discussion that follows draws heavily on McCauley (2006).

[14] This possibility is suggested by Chen and Peng (2007). Eichengreen (2006) goes further, suggesting that Hong Kong may eventually substitute the renminbi for the Hong Kong dollar.

borrow abroad at lower cost and in significantly larger amounts than may be available domestically. Finally, it will be a spur to the further development of the domestic financial system. It is, in short, a financial counterpart to the internationalisation of the real economy that has occurred with remarkable speed in so many East Asian countries.

The internationalisation of Asian currencies may be delayed by the severe international financial crisis that erupted in 2008, especially the floating of international bond issues. But the crisis need not delay the increased use of Asian currencies for the invoicing of Asian exports; it could indeed accelerate that process, as Asian firms seek to hedge against large movements in the currencies of their trading partners. As the crisis subsides, moreover, the process of internationalisation can be expected to resume.

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Motivations for swap-covered foreign currency borrowing

Anella Munro and Philip Wooldridge[1]

1. Introduction

Borrowing denominated in foreign currencies soared during the 2000s.[2] Gross issuance of foreign currency bonds tripled between 2002 and 2007 to $2.4 trillion, and even in 2008, during the international financial crisis, foreign currency borrowing remained relatively high (Figure 1). Issuance in some previously non-internationalised currencies, including a number of Asia-Pacific currencies, increased particularly fast (Figure 2). Indeed, for many currencies, issuance by non-residents outstripped the growth in issuance by residents, thereby expanding the presence of foreign issuers in the market (Figure 3).

A puzzling aspect of this large volume of foreign currency bonds is that many issuers immediately swap the funds raised into another currency, typically their own local currency. In other words, issuers raise foreign currency funding and simultaneously enter a currency swap to pay interest in local currency and receive interest in foreign currency, thereby replicating the cash flows associated with a local currency bond. What motivates borrowers seeking local currency financing to issue swap-covered foreign currency bonds rather than tap the local currency market directly?

The finance literature focuses on operational incentives as the main explanation for why borrowers tap foreign currency markets. Allayannis and Ofek (2001) examine a sample of S&P 500 non-financial firms and find evidence that firms issue foreign currency-denominated debt to hedge currency exposures arising from foreign operations or foreign currency income. Kedia and Mozumdar (2003) obtain similar results for foreign currency debt issued in 10 major currencies by large US firms. Geczy et al (1997) and Graham and Harvey (2001) find that firms with greater growth opportunities and tighter financing constraints are more likely to use currency derivatives, as well as those with foreign exchange exposure and economies of scale in hedging.

Rising trade and investment flows undoubtedly contributed to the increase in foreign currency bond issuance during the 2000s. However, issuance rose faster than can be explained by such flows alone. For example, foreign currency issuance rose from about 10% of world exports in the late 1990s to over 14% in 2006–07 (Figure 1). Moreover, non-financial corporations, which are the focus of most of the above-mentioned empirical studies, are minor participants in foreign currency bond markets. Non-financial corporations accounted for less than 10% of foreign currency bond issuance during the 2000s. Financial institutions are the largest borrowers in foreign currency bond markets, followed by governments, and

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[2] Bonds are categorised as "foreign currency bonds" when denominated in a currency different from that of the territory where the issuer principally resides and as "local currency bonds" when denominated in the same currency as that of the territory where the issuer principally resides. In this paper, no distinction is made between onshore and offshore issuance.

both are less likely than non-financial corporations to have an operational reason to borrow in foreign currency. Financial institutions and governments with no foreign operations or sales regularly seek to lower their financing costs by engaging in "opportunistic" swap-covered borrowing (McBrady and Schill (2007)).

Furthermore, in the few countries with comprehensive national data on derivative positions, a substantial proportion of foreign currency borrowing is evidently swapped into local currency. In Australia, close to 85% of external debt liabilities denominated in foreign currencies are hedged with financial derivatives into Australian dollars (Becker et al (2005)). In New Zealand, about 81% of foreign currency liabilities are hedged into New Zealand dollars (Statistics New Zealand (2008)).

The literature on swap-covered interest parity indicates that price differences across markets are actively arbitraged. In the most liquid markets, prices can adjust to new information without any trading taking place and so are unlikely to deviate significantly from their no-arbitrage levels. In less liquid markets, prices are slower to adjust and, therefore, temporary arbitrage opportunities may explain some swap-covered borrowing. However, if temporary, then opportunities for arbitrage should decline over time. The growing participation of non-residents in local currency markets, shown in Figure 3, and the large volume of swap-covered borrowing in some well developed markets indicate that the factors that give rise to swap-covered borrowing may be persistent.

Drawing on the literature on debt issuance, we consider a range of market imperfections and frictions that may result in persistent gains from raising local currency financing indirectly, on a swap-covered basis, rather than directly. Transactions costs, market size, market incompleteness, information asymmetries and regulatory frictions all potentially contribute to the attractiveness of swap-covered borrowing. We take these propositions to a large database on debt issuance, examining the characteristics of bonds issued by residents in foreign currency and by non-residents in local currency, natural swap counterparties with potentially comparative cost advantages. We find that the relative characteristics of resident and non-resident counterparties' issuance, in terms of credit quality, maturity and coupon structure, are consistent with the implications of many of the motivations considered. The counterparties' characteristics are significantly different in several respects, consistent with some of the hypotheses put forward.

While this paper has a finance focus, it is also relevant to the macroeconomic literature on financial crises. Many past crises were exacerbated by currency and maturity mismatches on firms' or banks' balance sheets. Countries' vulnerability to such mismatches is sometimes attributed to residents' inability to borrow abroad in their own currency ("international original sin", which leads to currency mismatch) or to borrow long-term in the domestic market ("domestic original sin", which leads to maturity mismatch).[3] Credible macroeconomic policies that protect the value of debts denominated in local currency, such as a commitment to low inflation, fiscal prudence and a transparent exchange rate policy, are necessary if non-residents are to buy local currency debt. But sound macroeconomic policy does not appear to be sufficient in some emerging markets. This paper looks in more detail at the microeconomic level. Swap-covered borrowing may offer a way to overcome currency or maturity mismatches, through the use of foreign debt markets. However, it is not a panacea. Against any benefits must be weighed the risks and regulatory demands associated with a more complex form of financing, as well as the consequences for the development of local capital markets. Moreover, if there are benefits to be exploited from swap-covered borrowing, they can only be realised if regulations, particularly exchange controls, allow. Residents must

[3] The term "original sin" was first used by Eichengreen and Hausmann (1999).

be able to borrow in foreign currency and non-residents in local currency, and both must be permitted to engage in currency swaps.

The rest of the paper proceeds as follows. Section 2 provides an overview of the size and structure of cross-currency swap markets. Section 3 explores potential motivations for swap-covered foreign currency borrowing, and Section 4 takes the implications of these motivations to the data on foreign currency bond issuance. Section 5 discusses the risks of swap-covered borrowing. The final section concludes with policy lessons and areas for future research.

2. Currency swap markets and international bond markets

Swap-covered foreign currency borrowing presumes the existence of a currency swap market. Currency swaps are over-the-counter derivatives. They can be characterised as an exchange of a loan in one currency for a loan in another currency. The principal amount is usually exchanged at both the initiation and termination of the swap, and interest payments are exchanged during its life. Interest can be paid at either a fixed or a floating rate. While plain vanilla currency swaps take the form of fixed-for-floating rates, there are a bewildering variety of ways in which currency swaps can be structured. Currency swaps can be negotiated for any maturity, but they are typically used for medium- and long-term transactions, out to several decades for some currencies.[4]

Currency swaps were introduced in the 1970s, and their use has expanded enormously since then. According to the BIS Triennial Central Bank Survey, the average daily turnover of currency swaps rose from $3.8 billion in April 1995 to $31.5 billion in April 2007 (Table 1). The nominal value of outstanding swaps rose from $2.0 trillion to $14.1 trillion over the same period.

An important innovation in currency swap markets was the shift in the 1990s towards the trading of currency basis swaps, in which floating rate payments in one currency are exchanged for floating rate payments in a different currency. A currency swap can thus be decomposed into a combination of a cross-currency basis swap and single-currency interest rate swaps. Currency basis swaps are typically quoted against US dollar Libor. A basis swap spread of *x* basis points indicates that a counterparty wanting to swap US dollars for a foreign currency loan must pay *x* basis points above the benchmark floating rate on foreign currency funds in return for US dollar Libor. As shown in Figure 4, currency basis swap spreads for many currencies were positive over the 2005–07 period and then turned negative in 2008.[5]

In the 2000s, the trading of currency swaps increased noticeably for many currencies. Whereas in April 2004 there were only seven currencies in which turnover exceeded $400 million a day, in April 2007 there were 15 currencies with turnover above $400 million, including KRW, ZAR and HKD.

The development of currency swap markets is closely related to the participation of non-residents in local currency markets and, equally as important, the participation of residents in

[4] For short-term transactions, up to one year, foreign exchange (FX) swaps are more widely used. Unlike currency swaps, FX swaps do not involve an exchange of payment streams; only the principal amount is exchanged.

[5] The downward move in spreads in 2008 likely reflected a combination of supply pressures and changes in the risk characteristics of the underlying money market instruments. See Baba and Packer (2008) for a discussion.

foreign currency markets. By definition, the currency exposures and preferences of non-residents differ from those of residents. Residents of one territory do not generally have a need for funding in the currency of another territory. Therefore, there is a natural symbiosis between resident and non-resident market participants. In currency swap markets as in other segments of foreign exchange markets, controls that restrict transactions between residents and non-residents tend to depress trading activity (Tsuyuguchi and Wooldridge (2008)).

While investors can participate in currency swap markets, the participation of issuers appears to be especially important for the development of these markets. Issuance by non-residents of bonds denominated in a given currency has significant explanatory power for the turnover of currency swaps in that currency (Figure 5a). In other words, countries with large non-resident participation in their bond markets relative to GDP tend to have large currency swap markets. New Zealand and Switzerland are at one extreme and many emerging market currencies are at the other. The relationship between issuance by residents of bonds in foreign currencies and local currency swap activity is weaker but still positive (Figure 5b).

It is unclear whether foreign currency issuance is a pre-condition for the development of a currency swap market. For example, Korea has a large currency swap market even though few non-residents borrow in KRW. What is clear is that activity in one market supports activity in the other. This self-reinforcing relationship is consistent with the contention, put forth by McBrady and Schill (2007) among others, that internationally active bond issuers are the arbitrageurs who effectively link global bond markets.

3. Motivations for swap-covered foreign currency borrowing

There are two commonly cited explanations for the use of swaps: risk management and comparative advantage (Kolb (2000)). Risk management is undeniably an important motivation for the general use of currency swaps. When either the operations or desired financial structure of a firm change, currency swaps are a cost-effective way to transform risk exposures and alter future cash flows. However, changes in operations and financial structures cannot explain swap-covered borrowing; by definition, such borrowing is intended to replicate risks, not transform them. Bond issuers raising funds in one currency with the express intention of swapping the funds for another currency are choosing to replicate cash flows that could also be achieved by borrowing directly in the desired currency.

Comparative advantage is a more convincing motivation for swap-covered foreign currency borrowing. Indeed, central banks in countries with large volumes of swap-covered borrowing frequently cite comparative advantage as the key motivation for such borrowing (see eg Eckhold (1998), Drage et al (2005), Ólafsson (2005), Ryan (2007)). In financial markets, comparative advantage exists when the same risk is priced differently in different markets. If borrowing costs differ across markets, then issuers can reduce their overall financing costs by raising funds in the market in which each has a comparative cost advantage and swapping the proceeds.

Covered interest parity

The existence of comparative advantage creates opportunities for arbitrage. As arbitrage takes place, costs should converge consistent with covered interest rate parity. Empirical support for long-term swap-covered interest parity is weak relative to short-term covered interest parity using forward contracts.[6] Most studies find that deviations from long-term

[6] On short-term interest parity, see Taylor (1987) and Peel and Taylor (2002).

interest parity are small on average but can be large and persistent. Popper (1993) estimates mean absolute deviations of 15 to 50 basis points among major currencies for the period 1985–88. Fletcher and Taylor (1996) adjust for transactions costs and estimate deviations of 12 to 33 basis points for the period 1985–89.

The persistence of deviations from covered interest parity does not necessarily prove the availability of arbitrage opportunities. Measured deviations may reflect underlying risks. In other words, estimated differences in borrowing costs across markets may compensate for risks and so, on a risk-adjusted basis, may not indicate a comparative cost advantage. Turnbull (1987) suggests that spread differences for seemingly identical risks reflect compensation for credit risk taken on by the higher-quality counterparty in a swap agreement. Counterparty credit risk can be important for currency swaps because they involve an exchange of both principal and interest payments, in contrast to interest rate swaps, where only interest payments are exchanged (Duffie and Huang (1996)). Similarly, currency basis swap spreads incorporate differences between the credit risk embedded in the money market rates of one currency and that in the other currency (Tuckman and Porfirio (2003)). For example, if the non-dollar leg of a currency basis swap is based on a collateralised rate, such as a rate for bankers' acceptances, and the US dollar leg is based on Libor, an unsecured bank lending rate, then the swap spread is fairly priced only when positive.

Nevertheless, several studies find that issuers systematically respond to estimated deviations from interest parity. Cohen (2005) finds that the choice of currency in international bond issuance is influenced by currency strength and interest rate differentials, suggesting a role for expected, uncovered interest returns. McBrady and Schill (2007) examine "opportunistic" foreign currency issuance by firms with no foreign currency revenues over the period 1993–97. They find that uncovered interest "bargains" of 10 to 20 basis points are common and persistent and that the choice of issuing currency is influenced by differences between local and foreign funding costs.

Even if there is no observed deviation from covered interest parity, if market imperfections and frictions give rise to asymmetries between markets that can be arbitraged through swap-covered borrowing large volumes of swap-covered foreign currency borrowing may persist in order to maintain swap-covered interest parity. Imperfections vary significantly among markets. In general, large financial markets, particularly US dollar and euro markets, more closely meet the ideal of a complete market than small markets, such as Philippine peso or Indian rupee markets.[7] Differences among markets potentially give issuers more favourable access to one market than to another, thereby raising the possibility that issuers can gain by exploiting their comparative advantage and engaging in swap-covered borrowing.

The remainder of this section focuses on four types of market imperfections that potentially give rise to cross-border arbitrage opportunities: transactions costs, non-traded assets, agency and information problems, and regulations. The importance of each of these as a motivation for swap-covered foreign currency borrowing is likely to differ across markets and change over time. In liquid, complete markets, prices can adjust to new information without any trading taking place and so arbitrage is unlikely to explain why issuers engage in swap-covered borrowing. In less liquid markets, prices are slower to adjust and thus arbitrage opportunities may exist, but probably only temporarily. In illiquid, incomplete markets, arbitrage opportunities may be substantial and persistent.

[7] There are exceptions. For example, yen financial markets are the third largest in the world, but sterling markets are widely perceived to be more developed. For a ranking of financial sector development, see eg World Economic Forum (2008).

Transactions costs

At the most simple level, the existence of transactions costs would tend to favour borrowing directly rather than through a more complex route involving multiple transactions. Transactions costs, however, differ substantially among markets. In financial markets, some types of transactions costs are a decreasing, non-linear function of volumes. For example, the maintenance of trading systems involves fixed costs and, therefore, total trading costs decline as volumes increase. In addition, the heterogeneity of market participants is often greater in large markets, thereby reducing search costs. The self-reinforcing nature of market liquidity strengthens the link between transactions costs and volumes: the willingness of a market participant to transact in a given market depends on the willingness of other participants to do likewise (CGFS (1999a)). As a result, transactions costs can differ significantly for nearly identical instruments.[8]

In a small market, the volume of transactions in any given instrument will naturally be smaller than in a large market, and transactions costs will be correspondingly higher. If the relationship between volumes and transactions costs is convex, then the cost difference of issuing a large bond in a small market compared to a large market may be less than the difference to issuing a small bond. Owing to differences in *relative* transactions costs, issuers from small markets, especially issuers of small bonds, may be able to lower their borrowing costs by tapping more liquid markets.

In addition to varying with volumes, transactions costs often vary with the riskiness of the traded instrument. Chakravarty and Sarkar (1999) find that both trading volumes and risk are equally important determinants of bid-ask spreads in US fixed income markets: spreads decline with trading volume and increase with the bond yield and residual maturity. Consequently, relative transactions costs for risky bonds, including low-grade bonds and long-duration bonds, may be lower in large markets.

Transactions costs can be broadly defined to include enforcement and bankruptcy costs. Enforcement procedures are simpler in certain jurisdictions. In the international bond market, contracts are predominantly governed by English law, regardless of the residency of the issuer or the currency in which the bond is denominated. The probability of a creditor needing to take enforcement action varies according to the credit quality of the borrower and, therefore, low-grade borrowers from markets where enforcement costs are high may be able to lower their financing costs by committing to contracts settled in more creditor-friendly jurisdictions, and swapping the proceeds with a non-resident borrower that can signal high credit quality and issues debt in the market with weak enforcement. While this is primarily a motivation for offshore borrowing (the borrower from the weak-enforcement market could issue in the desired currency in the euromarket), if offshore use of a currency is restricted then differences in the legal and information environments can also motivate an exchange of borrowings between low-grade and high-grade borrowers.

Transactions costs may also help to explain why issuers, rather than investors, appear to be the main arbitrageurs in international bond markets. Investors typically trade in smaller volumes than issuers: one bond issue is typically bought by many investors. If investors are willing to assume credit risk but not currency risk, then it is likely to be cheaper for the issuer to bundle a currency swap together with a foreign currency bond than for multiple investors to buy a foreign currency bond and swap out the currency risk.

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[8] For example, in government securities markets, bid-ask spreads are usually much narrower for recently issued ("on-the-run") bonds than for off-the-run issues (see eg CGFS (1999a), Fleming (2002)).

Non-traded assets

The literature on non-traded assets[9] identified a variety of reasons why markets may be segmented and incomplete and, in turn, diversification in international financial markets may be difficult.[10] The range of assets traded differs substantially among markets. The absence of a particular type of asset may arise from either a lack of supply or a lack of demand. The structure of an investor's liabilities may create demand for particular types of assets; conversely, the structure of a borrower's assets may create demand for a particular form of funding. This can make it difficult for investors to optimise their portfolios to meet their investment objectives, and make it difficult for borrowers to raise funding without one or the other taking on additional risk. Consequently, investors may end up shunning certain risks altogether. Generally, smaller markets tend to have more non-traded assets than larger markets. The juxtaposition of assets that are traded in one market but not in another can create opportunities for arbitrage.

An important asset missing in some markets is bonds with minimal default risk, ie bonds with the highest, AAA credit ratings. National governments are typically the most creditworthy borrowers in their own currency. In countries where the government is not very creditworthy (for example, because it has a history of poor macroeconomic management), there are unlikely to be other resident issuers with (international) AAA credit ratings. There is usually a "sovereign ceiling", which caps the perceived creditworthiness of borrowers in a country. Even in countries where the government is very creditworthy, there may be a scarcity of highly rated debt because fiscal prudence restricts the supply of government debt. Swap-covered borrowing involving a highly rated non-resident issuer allows issuers to fill the void, benefiting from the tighter credit spread on top-rated bonds relative to lower-rated bonds.

Another important asset missing in some markets is long-term, fixed rate bonds, ie bonds with maturities beyond five years paying a fixed (as opposed to a floating) coupon. In countries with a history of poor macroeconomic management, a high degree of economic uncertainty can cause investors to avoid such investments. Even in countries with a stable policy environment, investors may be constrained (by regulation or by liability structure) from buying long-term, fixed rate bonds, or may prefer not to because of risk preferences. As a result, the cost of issuing a long-term, fixed rate bond can vary significantly among markets.

Other important assets missing in some markets are foreign exchange, interest rate and credit derivatives. Derivatives facilitate the unbundling of risks.[11] Local currency bonds are typically exposed to exchange rate, interest rate and credit risks, which investors may be willing to bear individually but not in combination, particularly if these risks are correlated (for example, domestic credit risk may be correlated with currency risk).[12] If instruments are

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[9] See Cuthbertson (1957) for a discussion of heterogeneous clienteles as an explanation for the term structure of interest rates; and Modigliani and Sutch (1966) on preferred habitat (bond investors prefer one maturity over another, for example to match their liabilities, and are only willing to buy bonds outside their maturity preference if a risk premium is paid). Svensson and Werner (1993) examine portfolio choice and asset pricing when some assets are non-traded, for example when a country cannot trade claims to its output on world capital markets. Vayanos and Vila (2007) present a model in which arbitrageurs integrate markets.

[10] See French and Poterba (1991); Baxter and Jermann (1997) on the extent of the lack of diversification; and Obstfeld and Rogoff (2000) in the context of a broader discussion.

[11] Burger and Warnock (2007) find that high variance and negative skewness deter US investors from investing in foreign bond markets. To the extent that these risks can be hedged or unbundled (eg they are credit or market risk), there may be gains to swap-covered borrowing; to the extent that they are the result of poor macroeconomic management, swap-covered borrowing may not overcome them.

[12] For example, if, in times of stress, the credit quality spread rises (the price of the bond falls) at the same time as the minor currency depreciates (flight to quality to the US dollar), then a highly rated non-resident will be in a position to unbundle those risks relative to a lower-rated domestic bond.

available in one market to unbundle risks but not in another, then this can create opportunities for arbitrage. Investors seeking exposure to credit risk may be willing to buy bonds issued by low-grade foreign borrowers, which potentially reduce the idiosyncratic risk in their portfolios, but in the absence of a liquid currency swap market only in a given currency. For investors seeking exposure to exchange rate or interest rate risk, local currency bonds issued by high-grade non-residents may be in greater demand than bonds issued by lower-grade residents in the absence of a liquid credit derivatives market. Herrera-Pol (2004) suggests that strong demand for the World Bank's issues of international bonds in minor currencies is explained in part by investors' preference to take on minor currency risk separate from credit risk. If issuers can unbundle risks for investors, then they may achieve lower borrowing costs. Common themes in discussions with market participants are segmentation of markets for currency risk and credit risk, and difficulty among domestic issuers in placing domestic currency debt directly.

Agency and information problems

Agency and information problems are omnipresent in financial markets but are more acute in some markets than others. In particular, the effectiveness of mechanisms to mitigate agency and information problems varies considerably. Some countries have weak disclosure requirements, poor accounting practices, opaque corporate governance rules, and concentrated ownership structures. Such information asymmetries contribute to home bias, whereby investors hold a larger share of local assets in their portfolios than would be optimal in a well diversified portfolio. Stulz (1981) constructs a simple model of international asset pricing in which there is a cost associated with holding risky foreign assets and shows that investors will not hold some foreign assets, even if the return is increased slightly.[13] Furthermore, local investors tend to be better informed than foreign (distant) investors. For example, for a sample of 32 countries, Bae et al (2008) find that local analysts' earnings forecasts are more precise than those of analysts based in countries far from the company being analysed.

Moreover, borrowers from countries where mechanisms to mitigate agency and information problems are weak may be able to expand their investor base, thereby lowering their financing costs, by committing to contracts that require them to adhere to higher standards. Foreign bond markets potentially serve this purpose.[14,15] This is primarily a motivation for offshore borrowing, but if offshore use of a currency is restricted then it may be mutually advantageous for borrowers from markets with weak standards to issue abroad in foreign currency and swap with borrowers that are able to signal higher standards.

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[13] See also Stulz (2005), which discusses agency problems in the context of foreign investment, and Alfaro et al (2005), which examines explanations for the Lucas paradox (the lack of capital flows from rich to poor countries) and finds institutional quality to be the most important.

[14] Banks play an important role in overcoming agency and information problems. For example, Hale and Santos (2008) find that firms with a record of high creditworthiness and low creditworthiness enter the public bond market (investment grade market and high-yield markets, respectively) before firms with intermediate reputation. Moreover, a firm's relationships with investment banks in connection with private bond issues and syndicated loans may speed entry into the public bond market by allowing the firm to signal higher credit quality.

[15] The literature on equity cross-listings finds some evidence of higher valuations for firms listed in the United States due to greater disclosure (Doige et al (2004)). This argument is weaker for bonds, however, as disclosure requirements tend to be weaker.

Regulations

Regulatory barriers, such as taxes, reporting requirements and exchange controls, can create significant differences in financing costs between markets. Moreover, these differences can persist until there are changes to the regulatory wedge (Smith et al (1988)). Regulatory barriers are commonly imposed by governments or government agencies. Market participants themselves may also create regulatory barriers, for example through investment mandates that restrict the range of investible assets.

The list of potential regulatory barriers is long and may create cost differences between onshore and offshore borrowing. Regulatory barriers were pivotal factors in the growth of offshore markets for US dollars. To the extent that regulatory barriers restrict the offshore use of a currency, they may also motivate swap-covered borrowing. Indeed, currency swaps evolved out of instruments structured to circumvent exchange controls. In the 1970s, the United Kingdom restricted capital outflows. Firms planning foreign investments circumvented the restrictions through a parallel loan, in which a UK company made a sterling loan to the UK subsidiary of a foreign company and the foreign company lent the equivalent amount in foreign currency to the foreign subsidiary of the UK firm (Clark (2004)).

Even in the absence of exchange controls, there are other regulatory barriers that can give different advantages to resident and non-resident borrowers. Restrictions that effectively segment low-grade and high-grade markets are one potentially important source of comparative advantage. For example, assets eligible for use as collateral in central banks' lending operations often trade at a premium because the available supply is limited. High-grade bonds issued by non-residents are sometimes eligible, potentially creating an opportunity for such borrowers to lower their financing costs by engaging in swap-covered borrowing. Furthermore, many institutional investors are restricted by mandate from investing in low-grade bonds. These restrictions are less distortionary in markets with heterogeneous investor bases, such as large markets, and so low-grade borrowers may gain from issuing in larger markets and swapping the proceeds. Mandates that restrict the range of investible assets or the use of derivatives may also be a factor in explaining why arbitrage opportunities in international bond markets are exploited more actively by issuers rather than investors.

The market imperfections and frictions discussed above have a number of implications for the characteristics of swap-covered foreign currency bond issuance if such issuance is used to overcome those market rigidities. In the next section, we draw out those implications and compare them to the characteristics of bonds and issuers.

4. Data and empirical results

From the discussion in Section 3 it follows that if market imperfections and frictions are key motivations for swap-covered borrowing, then there should be clear differences in the characteristics of foreign currency bonds issued by those engaged in such borrowing and on opposite sides of the currency swap. In particular, for any country or currency bloc, there should be clear differences between foreign currency bonds issued by residents and local currency bonds issued by non-residents. We examine these differences for 13 Asia-Pacific economies and find that bond characteristics are generally consistent with issuers seeking to arbitrage cost differentials.

Data sources

Data on individual bond issues are obtained from the international debt securities database compiled by the BIS. This database combines information from several commercial data providers, namely Dealogic, Euroclear and Thomson Financial. The BIS seeks to capture all foreign currency bonds (foreign bonds and eurobonds) as well as local currency bonds

marketed to foreign investors, such as the international tranches of global bonds. The coverage of foreign currency bonds is close to complete.

Characteristics recorded for every bond in the database include: date of issue, original term to maturity, issue size, coupon structure (fixed or floating), currency and market of issue, type of issue (bond or medium-term note), and residency and industry sector of the issuer. The credit rating of the bond at the time of issue is also captured, but not for all bonds. Our sample covers the 1990–2008 period. We exclude bonds with an original maturity of less than one year because coverage is incomplete for short-term funding instruments. The BIS database includes neither US commercial paper nor interbank placements, which are close substitutes for money market instruments. We also exclude convertible (equity-linked) bonds because the funds raised are typically not swapped by the issuer.

From the BIS database, we extract all foreign currency bonds issued by residents of 13 Asia-Pacific economies: Australia, China, Chinese Taipei, Hong Kong SAR, India, Indonesia, Japan, Korea, Malaysia, New Zealand, the Philippines, Singapore and Thailand. We also extract all bonds denominated in the currencies of these same 13 economies and issued by non-residents. This results in 26 sub-samples. Bonds issued by residents of offshore financial centres and not denominated in the local currency of the centre are classified as foreign currency bonds regardless of the nationality of the issuer. For example, a Hong Kong dollar bond issued by the Cayman Islands-based subsidiary of a Hong Kong firm is classified as a Hong Kong dollar issue by a non-resident.

The number of observations in the 26 sub-samples varies enormously. The number of foreign currency bonds issued by Asia-Pacific residents ranges from 10,016 by Australian residents to 22 by Taiwanese residents. The number of bonds denominated in Asia-Pacific currencies issued by non-residents ranges from 79,220 in Japanese yen to 4 in Chinese renminbi.

For each of the 13 economies and every bond characteristic of interest, we test for differences between the distribution of foreign currency bonds issued by residents and the distribution of local currency bonds issued by non-residents. The distributions are typically severely skewed, and so we use a non-parametric test: the Wilcoxon-Mann-Whitney test, corrected for tied ranks (see eg Siegel and Castellan (1988)). The null hypothesis tests whether the two sets of observations do not differ systematically from each other. The alternative states that they do differ systematically, implying that they are not samples from the same population. We calculate size-weighted means, to account for skewness in issue sizes, as well as equally weighted means.

One important piece of information missing in our sample is whether the issuer swapped the funds raised into another currency. As a result, our sample is biased against finding patterns consistent with arbitrage by issuers. Swap-covered borrowing is surely not the sole motivation behind all foreign currency bonds in our sample, and so using the sample to test whether market imperfections can explain issuer behaviour minimises the probability of a type II error but heightens the probability of a type I error.

Results

There are several potential ways to compare the characteristics of the bond data with the implications from the previous section. Here we present a univariate analysis contrasting characteristics of bond issues in foreign currencies by residents of a given market with the characteristics of issues in the local currency of the same market by non-residents. Summary statistics are presented in Tables 2 to 9. Histograms are plotted in Figures 6 to 9.

Currency of issuance

Table 2 compares the currency composition of foreign currency bonds issued by Asia-Pacific residents with the residency composition of local currency bonds issued by non-residents. Foreign currency issuance is highly concentrated in the USD market. Concentration is lowest among Australian and New Zealand issuers, who borrow large amounts of EUR and minor currencies in addition to USD, and highest among Indian issuers (a small sample). The US domestic market accounts for about 40% of global domestic debt markets, as reported in BIS statistics. In contrast, the share of USD issuance among residents of these Asia-Pacific economies is typically much higher.[16] For local currency bonds issued by non-residents, the distribution of issuance across currencies is less concentrated, consistent with the notion that differences across markets may create opportunities for gains from trade.

The concentration in USD borrowing could relate to a several characteristics of the US market, including a large low-grade market (lower costs or stronger risk assessment infrastructure), size of the term market (lower costs), and flexibility from a (usually) liquid short-term commercial paper market. If transactions costs are a convex, decreasing function of volumes, and different market segments (in the domestic or foreign market) have different volumes, there may be gains from swap-covered borrowing with a non-resident with different characteristics. Foreign currency bonds issued by residents of a smaller or more segmented markets will tend to be denominated in currencies of larger markets, where the difference in costs between market segments is smaller. Conversely, bonds issued by non-residents in the smaller or more segmented market will tend to be issued by residents of large markets (to provide a swap counterparty). Credit quality and maturity are discussed in more detail below.

Issue size

Table 3 and Figure 6 summarise distributions by issue size. For 10 of the 13 comparisons, the mean size of foreign currency bonds issued by residents is larger than that of local currency bonds issued by non-residents. This result does not support the hypothesis that convex and decreasing transactions costs play a role (which would suggest that foreign currency bonds issued by residents of small markets would tend to be smaller in size). Instead it supports the idea that residents issue in a foreign currency to access a larger or more liquid market, while non-residents issuing in local currency are limited by market size or market liquidity.

Credit quality

Table 4 summarises the distribution of credit ratings for foreign currency bonds issued by residents and local currency bonds issued by non-residents. Lower numbers correspond to higher credit ratings, eg 1 = AAA. For all cases except Japan, the credit ratings of bonds issued by non-residents are significantly higher than those of bonds issued by residents. Differences in the distribution of credit ratings are consistent with low-grade and high-grade borrowers exploiting a comparative advantage to lower their borrowing costs. Such advantage could arise from differences in transactions costs, enforcement costs, non-traded assets or regulations.

As shown in Figure 7, this result is mainly due to the fact that non-resident issuance is concentrated in the AAA segment of the market. If there are few domestic high-grade issuers (eg because of a low sovereign ceiling, or because of fiscal prudence) leading to a scarce or

[16] Only in New Zealand is it lower, but that may be because New Zealand banks borrow through their Australian parents.

non-traded high-grade asset in that currency, then non-residents issuing bonds in that currency will tend to be highly rated (eg greater than or equal to the sovereign ceiling). Regulations may reinforce this from the demand side, if certain classes of investors (eg pension funds or assets accepted as collateral) are restricted to high-grade debt.

Enforcement mechanisms may also play a role. If there are differences across markets in enforcement mechanisms to mitigate agency and information problems, then residents of weaker enforcement areas will tend to issue foreign currency bonds in markets that adhere to higher standards, and local currency bonds issued by non-residents will be issued by residents of areas that adhere to higher standards or borrowers who can otherwise signal credit quality such as international organisations.

Industry sector

As a cross-check on the distribution of credit ratings, we also compare the distribution of issuers by industry sector. Whereas data on credit ratings are incomplete, data on industry sectors are available for the issuer of each bond. Credit ratings and industry sectors are loosely correlated. Supranational institutions and national governments from high-income countries tend to be the highest-rated issuers, with AAA or AA ratings. Financial institutions are typically rated AA or A, and non-financial corporations A or lower. However, bond issues may be rated either higher or lower than the issuer, depending on credit enhancements, subordination and other contractual clauses.

In nine of the 13 comparisons, resident issuers of foreign currency bonds came from sectors that tended to be rated lower than the sectors from which non-resident issuers of local currency bonds came (Table 5). Among both resident and non-resident issuers, banks and non-bank financial institutions were the dominant issuers (Figure 8). However, there were important differences in the industry sector of the next largest group of issuers. Among non-resident issuers supranational institutions and governments were active, whereas among resident issuers non-financial corporations were more active.

Maturity

If differences across markets in the demand for and supply of funding lead to relatively small or illiquid long-term bond markets, then foreign currency bonds issued by residents of the smaller market will tend to have a longer term to maturity relative to local currency bonds issued by non-residents. There is weak support for the notion that residents tap foreign currency markets for longer-term funding. The maturity of foreign currency bonds issued by residents is often, but not always, longer than that of local currency bonds issued by non-residents (Table 6 and Figure 9). In eight of the 13 comparisons, the maturity of foreign currency bonds is longer. In four comparisons, the maturity of local currency bonds is longer. In one case, the Philippines, there is no significant difference, although the issue weighted-mean maturity is longer for foreign currency bonds.

Coupon structure

If differences across markets in the demand for and supply of funding lead to a relatively small or illiquid fixed-coupon bond markets, then foreign currency bonds issued by residents of the smaller market will tend to have a greater proportion of fixed rate structures relative to local currency bonds issued by non-residents. The data do not support that hypothesis. Fixed rate bond issues account for a smaller share of foreign currency bond issues by residents than they do for local currency bond issues by non-residents (Table 7). In eight of the 13 comparisons, this is the case. In four comparisons, there is no significant difference in interest rate structures. Only in one case, Indonesia, do residents appear to tap foreign currency markets for fixed rate funding.

Foreign bond or eurobond

Foreign currency bonds can be issued as either "foreign" bonds or "euro" bonds. Foreign bonds are issued onshore, in the currency of the market where the bond is registered, whereas eurobonds are issued offshore, in a currency different from that of the market where the bond is arranged. Reporting requirements are typically more extensive for foreign bonds than eurobonds. However, issuers do not appear to use foreign currency bonds as a device to commit to higher reporting standards. The eurobond market is clearly the market of choice for foreign currency issues (Table 8). In only four cases – residents of China, Chinese Taipei, Malaysia and Thailand – are issuers more likely to issue foreign bonds than eurobonds. In all four economies, there are exchange controls that deter offshore use of the currency. Among the five substantial markets in terms of size (Australia, Hong Kong, Japan, New Zealand and Singapore), issuance is very skewed towards eurobonds. Peristiani and Santos (2008) report that, 10 years ago, it was cheaper to issue a bond in the US market, and that underwriting costs have declined over the decade. Eurobond costs, however, have fallen faster, eliminating the cost differential.

Single or multiple issue

We also considered whether a bond was issued as a single issue or part of a medium-term note (MTN) programme. A single bond issue often requires extensive documentation, whereas under an MTN programme the same documentation can be used for multiple securities.[17] Therefore, MTNs are less effective devices for committing to higher reporting standards. Local currency bonds issued by non-residents are overwhelmingly MTNs (Table 9). For residents of Australia, Hong Kong, New Zealand and Singapore (the more developed international bond markets and higher-rated economies), foreign currency bonds issued by residents are also almost all MTNs. In most other Asia-Pacific economies, residents' issues are usually single issues. These patterns provide some support for differences in reporting standards as a motivation for swap-covered borrowing. Alternatively, they may simply reflect the role of large, regular borrowers as the arbitrageurs in international bond markets.

5. The risks of swap-covered funding

The use of foreign currency bonds to raise local currency debt indirectly can pose risks to the financial stability of both the borrower and the borrowing economy. Swap-covered debt is a more complex product than direct borrowing, so places greater demands on the risk management capacity of the borrower and the regulator in terms of currency risk, counterparty risk, rollover risk and interest rate risk. Of these the most important is probably rollover risk, particularly where there are large net or gross external debt positions. In this section, these risks are discussed in turn, followed by a brief overview of how they played out in Australia and New Zealand in 2007–08, two countries with substantial net external debts funded in part through swap-covered borrowing. The discussion reinforces the importance of strong risk management, a sound banking system, the ability and willingness of governments to provide temporary support, and the benefits of domestic savings and more stable forms of external funding such as foreign direct investment.

[17] Each new MTN requires only a pricing supplement setting out the terms of the issue. MTNs are typically issued by large borrowers, who regularly disclose information, and are frequently tailored to satisfy specific investor preferences.

External debt and rollover risk

An important concern associated with synthetic local currency borrowing is a rapid increase in external indebtedness. Where it has been widely used, there are typically large gross or net external debt positions. Many of the potential motivations discussed in Section 3 suggest that borrowers previously restricted to borrowing local currency directly may be able to access cheaper funding or a wider pool of funding by overcoming market rigidities. Greater access to external funding may in turn lead borrowers to increase financial leverage, while increasing exposure to external wholesale funding. The risks, of course, need to be weighed against the benefits of financial integration and the extent to which they can be mitigated through prudential supervision.

The bulk of swap-covered financing involves financial intermediaries, and so maturity mismatch is a potential concern. Maturity mismatch may lead to rollover risk on two levels: during the tenor of the swap and at maturity of the swap. If the swap does not match the foreign currency debt and local currency assets in terms of tenor and coupon structure, as well as currency, then the borrower may face currency risk, rollover risk and interest rate risk.

Even if the swap matches assets and liabilities, rollover risk will re-emerge at maturity of the swap if the debt needs to be rolled over (for example, if net external debt is large). The rollover risks may be large for swap-covered borrowing which relies on wholesale funding sources. The same is true for wholesale funding in local currency. Both tend to be less stable than the domestic deposit base, which typically benefits from deposit insurance. Wholesale borrowing is normally not covered by government deposit insurance, and is likely to be less stable during a crisis.

Non-resident investors may be a particularly unstable funding source, providing funding during expansions when the local currency is expected to appreciate, and withdrawing funding during times of stress if the local currency is expected to depreciate. The ability to substitute domestic funding for large volumes of external funding (direct or swap-covered) may be very limited. Large net debt suggests weak domestic savings performance. The private saving rate may increase by a few percent relative to GDP, but the increase in savings may be small relative to gross external financing requirements in the event of severe external funding stress. Moreover, with integrated markets, external funding pressures are likely to spread quickly to domestic markets. In the event of severe stress, public savings will almost certainly be called upon, where feasible, to fill the funding gap if the net debt is large.

Swap-covered borrowing requires rollover in both funding and hedging markets. This added complexity may increase risk relative to external local currency funding. Allayannis et al (2003) look at a sample of East Asian non-financial borrowers and find that, during the Asian crisis, the financial performance of firms which used synthetic local currency debt was worse than that of those which relied on direct local or foreign currency borrowing. They attribute this result to the illiquidity of swap markets, which made it expensive for firms to roll over short-term derivative positions used to hedge long-term debt.

Swap-covered borrowing may allow a borrower to diversify funding sources. Among integrated financial systems, however, market liquidity is likely to be highly correlated, so that diversification of the funding base may offer little scope for reducing rollover risk. Diversifying the funding base from the domestic market (in the periphery) to the US markets (the centre) may normally be considered a good approach to reducing liquidity risk, as US markets are normally very liquid and may be resilient to stress in the periphery. Stress in the centre, however, is likely to spread to smaller markets in the absence of exchange controls (see Baba and Packer (2008) for a discussion on foreign exchange forward and swap market dislocations in 2007–08). A sharp rise in the cost of foreign currency funding may translate rapidly to a rise in the cost of local currency funding. With some degree of segmentation among markets, however, there may be some scope to reduce market risk. This appears to have been the case to some degree in 2008, with a number of new issuers entering the samurai market (Japanese yen bonds issued in Japan by non-residents).

Currency risk

The ability to hedge currency risk is a major potential benefit of swap-covered borrowing for an emerging economy that has difficulty borrowing in its own currency. It can potentially benefit from access to international financial markets without currency mismatch if a non-resident can successfully issue local currency debt to provide a swap counterparty (if exchange controls do not prohibit).

Interest rate risk

Even if borrowings are structured so that currency and tenor are hedged, interest rate risk could still be a problem if local currency income and local currency payments under the cross currency swap are not matched. For example, if a domestic bank swaps foreign currency payments for fixed-term local currency payments but has floating rate local currency income (or vice versa), it may face difficulty if monetary policy is adjusted rapidly. Liquid local currency interest rate swap markets help manage interest rate risk.

Replacement risk

Swaps are generally traded in over-the-counter markets. While this allows customisation of products, without central clearing the two borrowers assume each other's credit risk. Various hedged risks, including currency risk, can re-emerge if one counterparty to the swap defaults. As recent developments have shown, assessing counterparty risk is complicated by the opacity of firms' financial positions. When one counterparty fails, the other may be left with a mismatched position due to interest rate or currency fluctuations. For example, suppose the minor currency resident holds minor currency principal as collateral but has US dollar liabilities at maturity. If the minor currency depreciates sharply, losses could be substantial. Bilateral netting and collateral arrangements are widely used to reduce the risks associated with a counterparty default. Central clearing may reduce risks further by providing a highly rated central counterparty, requiring positions to be marked to market daily, and making use of multilateral netting through offsetting long and short positions. Potential barriers are low liquidity in minor currency markets, which may delay or prevent market-making and, high margins for those providing swaps in a less transparent environment.

Domestic market liquidity

A potential concern regarding synthetic debt is that offshore issuance may take liquidity from the domestic market. Swap-covered borrowing itself does not necessarily reduce the size of the local currency market. Rather, it changes the composition of issuers in the market from domestic borrowers to non-resident borrowers. However, if non-resident borrowers prefer to issue in the offshore markets, there may be a loss of liquidity in the domestic market. This need not be the case, though. Offshore issuance may complement domestic market development through competition that motivates efficiency or by establishing a minor currency asset class (widening the pool of potential investors).

How did the risks play out in 2007–08?

In the Asia-Pacific region, Australia and New Zealand stand out as countries with large outstanding amounts of swap-covered borrowing and large net external debts. Non-resident local currency bond issuance at end-2007 was 44% of GDP in New Zealand and 27% of GDP in Australia. In this section, we briefly discuss recent developments in those two markets.

Most previous crises had been concentrated in the periphery, and the US markets were thought to be deep and liquid so that additional funding could be found without large adverse price movements. This turned out not to be the case. With the drying-up of the US commercial paper market, an important source of temporary liquidity, and dislocation in currency swap markets associated with dollar funding pressure and counterparty concerns, borrowing costs rose sharply. The US dollar shortage spread quickly to domestic markets, where funding costs rose as borrowers turned to domestic markets for funding. The rise in US dollar costs was moderated a little as demand for dollars drove down the cost of swapping US dollar funding into other currencies where liquidity pressure was less severe. With increased risk aversion, placing minor currency debt directly became more difficult.

Australian banks and their New Zealand subsidiaries appear to be managing these risks successfully. The banks entered the crisis well capitalised and profitable. Hedging appears to have largely matched external borrowings and local currency assets. Asset quality has deteriorated somewhat, but not sharply, and gross positions are modest.

Rollover risk, or the degree to which it translates into higher funding costs, has been very important because of the large net external debt. While private savings have risen and deposits have increased, this has been far from the scale required to fund current the account deficits and roll over external debt. Several other factors have helped to fill the potential funding gap. First, liquidity provision by the two central banks was scaled up rapidly. The ability to rapidly scale up liquidity has, in turn, been facilitated by effective control of the overnight interest rate, which has meant that an increase in liquidity need not undermine monetary policy, and strong fiscal positions (fiscal surpluses and near-zero public sector debt) that have allowed greater public borrowing without adverse effects on public sector credit quality.

Second, in early 2008, the banks prefunded a substantial amount of maturing debt (despite high perceived costs at the time) as a cushion against continued market dislocations, which left them in a stronger position when rollover costs increased later in the year.

Third, government guarantees have helped the banks increase both domestic and foreign currency funding by upgrading the credit quality of bank debt to AAA in the case of Australia and to AA+ in the case of New Zealand. In both cases, the guarantees are intended to be temporary.

Fourth, Federal Reserve initiatives to provide US dollar liquidity increased credibility. These initiatives included provision of US dollar swap lines to several countries, including Australia and New Zealand, and direct purchases of commercial paper (for which the AA banks were rated highly enough to be eligible),

Fifth, flexible exchange rates have aided adjustment. Currency depreciation of about 40% relative to the US dollar has both increased competitiveness (and so helped to reduce funding requirements) and lowered the US dollar value of the funding required. The latter has been valuable in the face of US dollar market illiquidity, as funding costs have tended to rise sharply with issuance volume. At the same time, currency depreciation has not had adverse valuation effects, as debts are effectively denominated in local currency. Overall, valuation effects are positive, as foreign currency assets have increased in local currency.

The resilience of Australia and New Zealand in the face of a US dollar crisis, despite large net external debts funded largely through US dollar markets, suggests that widespread use of swap-covered borrowing can be managed. That resilience has, however, been supported by a variety of mitigating factors, including a well capitalised banking system with good risk management, a strong fiscal position, scalable domestic currency liquidity provision, government guarantees, investment grade sovereign ratings, and floating exchange rates. Whether a country with a sub-investment grade rating or weaker institutions would be able to weather the same storm with substantial net debt is open to debate.

6. Conclusions

Still few countries consistently access external financing in their own currencies. Sound macroeconomic policies are recognised as a necessary condition for countries to borrow in their own currency. But sound macroeconomic policy – price stability, fiscal prudence and a transparent exchange rate regime – does not appear to be sufficient for some countries, suggesting that microeconomic constraints may also be important.

One suspect is domestic capital market development. The many initiatives to develop domestic bond markets in Asia in the past decade have facilitated local currency funding by extending domestic market liquidity and maturity, improving credit assessment, reducing market frictions and domestic market risk, and increasing non-resident access, especially for investors. Fiscal prudence and foreign reserve accumulation have contributed to rising sovereign rating ceilings, supporting extension of the domestic bond market to higher-grade debt. Some aspects of bond market development, such as developing an internationally rated AAA market and liquid low-grade market, may take decades. Swap-covered foreign currency borrowing may help domestic borrowers to efficiently access local currency funding in the meantime.

This paper aims to contribute to a gap in the literature in understanding the motivations for swap-covered borrowing. In this paper, we considered aspects of bond market incompleteness, and market frictions that may be overcome to some extent by swap-covered foreign currency borrowing and therefore motivate that form of borrowing. Empirical assessment established several stylised facts. The characteristics of bond issuance by residents in foreign currency and by non-residents in local currency (swap counterparties) are significantly different in several respects. Foreign currency issuance by residents is, on average, significantly lower-rated, longer-term and larger in size than non-resident issuance in the domestic market, consistent with the notion that swap-covered borrowing may provide resident issuers with access to larger, more liquid low-grade and long-term markets. Non-resident issuance in Asia-Pacific currencies is highly skewed towards AAA issuers, suggesting that a credit quality gap is important. This is consistent with several motivations, including a scarcity of high-grade minor currency debt, for example due to a low sovereign ceiling or fiscal prudence, regulations that limit certain investor classes to high-grade debt and risk unbundling.

In practice, many of the motivations for swap-covered foreign currency borrowing discussed may be valid in different countries at different times. In less complete and liquid markets, arbitrage of price gaps is likely to predominate. Most countries' low-grade debt markets are relatively undeveloped compared to the US market, and most countries' sovereign ratings are below AAA, so swap-covered borrowing provides a potential means of arbitraging non-traded assets and unbundling risk. Even in countries rated AAA such as Australia and Singapore, non-resident issuance is a growing share of total issuance in domestic currency, suggesting more persistent motivations such as market completeness through diversification or unbundling of risk. In recent years, bond markets in most currencies have become more international and cross-currency swap markets have grown rapidly where not restricted. The events of 2007–08 may reverse these trends in some markets for a while, and have helped our understanding of the risks. Looking forward, more globally integrated markets, including significant volumes of this pattern of borrowing, appear increasingly to be the norm.

The questions raised are important ones for policymakers in terms of understanding current market developments, promoting domestic bond market development and financial stability or understanding potential effects of easing exchange controls. Continued development of domestic bond markets remains an important focus to reduce information asymmetries, develop more liquid low-grade and term markets, reduce market frictions and support other domestic financial markets. Swap-covered borrowing provides a potential means to overcome market frictions, enabling domestic firms to raise financing more efficiently, and to diversify and deepen domestic currency debt markets. Many unanswered questions provide fertile ground for further research.

Tables

Table 1

Average daily turnover of currency swaps[a]

	April 1995	April 1998	April 2001	April 2004	April 2007
All currencies[b]	3,772	9,902	7,190	21,116	31,497
USD	3,126	8,628	5,944	17,605	27,333
EUR			2,190	9,732	11,240
GBP	165	937	1,207	4,835	5,052
JPY	1,147	2,865	1,969	3,354	3,495
CAD	64	308	361	521	2,388
CHF	125	352	152	1,118	1,924
AUD	150	381	510	1,573	1,824
KRW	n/a	7	46	342	1,303
SEK	7	26	145	119	1,070
ZAR	0	20	50	62	538
NZD	9	11	101	80	474
HKD	18	231	285	293	420
INR	n/a	0	1	97	411
TRL	n/a	n/a	1	1	336
BRL	n/a	n/a	403	381	307
NOK	6	5	42	98	207
PLN	n/a	n/a	4	6	185
DKK	150	41	103	87	182
MXN	n/a	0	34	384	161
SGD	2	73	18	54	154
IDR	n/a	30	13	24	148
CNY	n/a	n/a	n/a	4	133
TWD	n/a	6	22	102	99
THB	n/a	4	11	246	59
CZK	n/a	n/a	5	8	40
MYR	n/a	n/a	n/a	11	37

n/a = not available

[a] Turnover in over-the-counter markets of the specified currency against all other currencies, in millions of US dollars. Data are adjusted for local and cross-border inter-dealer double-counting but are not adjusted for gaps in reporting.

[b] The sum of transactions in individual currencies equals twice the total turnover because two currencies are involved in each transaction.

Source: BIS Triennial Central Bank Surveys.

Table 2

Share of issuance by currency of issue and residency of issuer[a]

	Foreign currency bonds issued by residents: currency of issue					Local currency bonds issued by non-residents: residency of issuer					
	USD	EUR	JPY	Other	HH[b]	US	EU[c]	Supra[d]	Other	Memo: nation[e]	HH[b]
AU	48	28	6	19	0.34	18	32	27	23	<1	0.26
CN	75	22	2	. . .	0.62	. . .	. . .	61	39	39	0.52
HK	88	2	2	8	0.78	5	19	6	70	14	0.54
ID	83	1	12	3	0.71	22	2	45	30	. . .	0.35
IN	99	. . .	. . .	1	0.97	18	6	18	57	. . .	0.40
JP	56	34	. . .	11	0.44	20	25	5	50	52	0.36
KR	69	10	13	8	0.51	63	. . .	. . .	37	35	0.53
MY	91	7	. . .	1	0.84	10	8	20	61	. . .	0.43
NZ	28	31	9	31	0.28	11	28	33	28	. . .	0.28
PH	88	6	5	1	0.77	23	. . .	61	17	. . .	0.45
SG	73	13	5	8	0.57	25	22	2	51	. . .	037
TH	78	. . .	22	. . .	0.66	29	15	19	37	. . .	0.28
TW	67	. . .	. . .	33	0.56	. . .	6	92	2	. . .	0.85

AU = Australia; CN = China; HK = Hong Kong SAR; ID = Indonesia; IN = India; JP = Japan; KR = Korea; MY = Malaysia; NZ = New Zealand; PH = Philippines; SG = Singapore; TH = Thailand; TW = Chinese Taipei; . . . = 0.

[a] Percentage share of total issuance over the 2000–08 period, calculated in current USD.

[b] Hirschman-Herfindahl index of concentration.

[c] Euro area.

[d] Supranational institutions.

[e] Non-resident issuers who are nationals of the specified country. Some nationals are included in the shares of US and EU residents, but most reside in "Other" countries, mainly offshore financial centres.

Sources: BIS; authors' calculations.

Table 3

Distribution by size of issue[a]

	Mean: size-weighted		Mean: equal-weighted		Standard deviation		Skewness		Number of observations		*W* test stat[d]
	FC by res[b]	LC by non-res[c]	FC by res[b]	LC by non-res[c]	FC by res[b]	LC by non-res[c]	FC by res[b]	LC by non-res[c]	FC by res[b]	LC by non-res[c]	
AU	620.4	251.0	64.3	25.7	189.1	76.1	7.0	5.9	10,016	9,976	51.17**
CN	490.0	169.8	200.0	153.1	245.6	58.3	2.2	1.8	128	4	0.15
HK	388.0	60.4	33.0	17.4	100.3	27.4	7.6	3.9	1,732	8,632	5.88**
ID	587.0	50.0	108.2	12.3	228.2	21.6	3.6	4.1	205	237	7.67**
IN	527.9	58.1	186.9	29.6	254.2	29.8	5.5	1.8	72	20	5.84**
JP	540.1	253.2	145.9	20.2	239.9	68.6	2.9	13.4	1,120	79,220	35.25**
KR	406.8	65.2	154.1	38.2	197.4	32.5	4.4	0.9	1,151	41	7.67**
MY	545.8	144.0	285.3	73.1	274.0	72.7	1.2	1.0	99	55	5.46**
NZ	386.0	224.2	102.9	52.8	171.0	95.2	4.6	5.0	306	1,829	9.83**
PH	573.2	93.5	280.2	45.1	287.4	48.8	2.4	1.1	175	12	4.57**
SG	460.2	90.0	28.5	17.5	110.9	35.7	8.2	4.6	1,830	1,498	0.96
TH	280.7	65.6	149.1	17.3	140.7	29.0	2.5	2.6	113	114	10.85**
TW	257.7	102.1	93.1	45.8	126.7	51.0	2.1	1.8	22	137	1.04

[a] In years.

[b] Foreign currency bonds issued by residents.

[c] Local currency bonds issued by non-residents, ie bonds denominated in the specified currency and issued by non-residents.

[d] Wilcoxon-Mann-Whitney test; ** and * indicate that the null hypothesis – ie that the two sets of observations do not differ systematically from each other – is rejected at the 99% and 95% confidence levels, respectively.

Table 4

Distribution by credit rating[a]

	Mean: size-weighted		Mean: equal-weighted		Standard deviation		Skewness		Number of observations		*W* test stat[d]
	FC by res[b]	LC by non-res[c]	FC by res[b]	LC by non-res[c]	FC by res[b]	LC by non-res[c]	FC by res[b]	LC by non-res[c]	FC by res[b]	LC by non-res[c]	
AU	2.7	1.9	3.3	1.8	2.4	1.5	1.6	1.9	686	482	13.54**
CN	7.3	.	7.9	.	1.2	.	0.5	.	46	0	.
HK	7.7	2.8	6.5	3.1	3.4	1.8	0.7	0.6	52	284	7.36**
ID	13.6	2.1	13.4	3.2	0.7	2.9	–0.6	1.9	21	11	7.73**
IN	9.4	.	9.7	.	0.6	.	0.0	.	18	0	.
JP	2.3		2.4	3.7	2.3	2.9	1.9	1.1	268	1,989	8.87**
KR	6.8	1.0	6.4	1.0	2.7	0	0.5	.	251	3	2.90**
MY	7.6	2.7	7.5	2.7	2.4	2.9	–0.1	2.1	41	7	3.18*
NZ	4.4	1.5	4.8	1.6	2.1	1.3	1.1	2.1	36	160	8.87**
PH	12.4	1.0	12.1	1.0	2.1	0.0	–3.8	.	40	2	2.38*
SG	5.2	2.7	6.1	3.3	4.6	1.8	0.5	0.0	55	41	2.58**
TH	8.2	3.2	8.5	3.9	3.0	2.4	0.5	–0.3	35	17	4.90**
TW	6.8	1.5	4.7	1.3	3.1	1.2	0.9	4.1	3	17	3.48**

[a] 1 = AAA/Aaa; 2 = AA+/Aa1; 3 = AA/Aa2; 4 = AA–/Aa3; 5 = A+/A1; 6 = A/A2; 7 = A–/A3; 8 = BBB+/Baa1; 9 = BBB/Baa2; 10 = BBB–/Baa3; 11 = BB+/Ba1; 12 = BB/Ba2; 13 = BB–/Ba3; 14 = lower than BB–/Ba3; . = no data.

[b] Foreign currency bonds issued by residents.

[c] Local currency bonds issued by non-residents, ie bonds denominated in the specified currency and issued by non-residents.

[d] Wilcoxon-Mann-Whitney test; ** and * indicate that the null hypothesis – ie that the two sets of observations do not differ systematically from each other – is rejected at the 99% and 95% confidence levels, respectively.

Table 5

Distribution by industry sector of issuer[a]

	Mean: size-weighted		Mean: equal-weighted		Standard deviation		Skewness		Number of observations		*W* test stat[d]
	FC by res[b]	LC by non-res[c]	FC by res[b]	LC by non-res[c]	FC by res[b]	LC by non-res[c]	FC by res[b]	LC by non-res[c]	FC by res[b]	LC by non-res[c]	
AU	2.4	2.0	2.1	2.3	0.5	0.7	1.5	0.9	10,016	9,976	16.9**
CN	2.0	1.8	2.4	1.5	0.9	1.0	–0.1	2.0	128	4	1.86*
HK	2.6	2.1	2.2	2.1	0.5	0.5	2.4	0.9	1,732	8,632	3.19**
ID	2.1	1.9	3.3	2.1	1.0	0.5	–1.0	2.3	205	237	12.6**
IN	2.7	1.6	3.0	1.7	0.9	0.6	0.0	0.0	72	20	5.24**
JP	3.2		3.4	2.3	0.9	0.6	–1.2	0.4	1,120	79,220	42.8**
KR	3.0	2.6	2.9	2.6	1.1	0.9	–0.1	0.6	41	1,150	1.50
MY	3.0	2.1	3.1	2.1	0.8	0.6	–0.9	0.0	99	55	7.14**
NZ	2.1	1.9	2.1	2.1	1.1	0.7	0.6	0.3	306	1,829	2.81**
PH	1.7	1.3	2.2	1.8	1.2	0.8	0.4	0.4	175	12	0.79
SG	2.7	2.4	2.3	2.2	0.6	0.5	1.6	1.6	1,830	1,498	5.50**
TH	2.5	2.2	2.5	2.1	1.2	0.5	–0.1	1.1	113	114	2.68**
TW	2.1	1.1	2.1	1.2	0.5	0.6	2.3	3.0	22	137	7.54**

[a] 1 = supranational institution, national government or sub-national government; 2 = bank; 3 = non-bank financial institution; 4 = non-financial corporation.

[b] Foreign currency bonds issued by residents.

[c] Local currency bonds issued by non-residents, ie bonds denominated in the specified currency and issued by non-residents.

[d] Wilcoxon-Mann-Whitney test; ** and * indicate that the null hypothesis – ie that the two sets of observations do not differ systematically from each other – is rejected at the 99% and 95% confidence levels, respectively.

Table 6

Distribution by maturity[a]

	Mean: size-weighted		Mean: equal-weighted		Standard deviation		Skewness		Number of observations		*W* test stat[d]
	FC by res[b]	LC by non-res[c]	FC by res[b]	LC by non-res[c]	FC by res[b]	LC by non-res[c]	FC by res[b]	LC by non-res[c]	FC by res[b]	LC by non-res[c]	
AU	10.3	5.1	8.8	3.5	8.1	3.3	1.7	6.2	10,016	9,976	61.21**
CN	7.8	9.5	7.3	9.3	9.2	1.5	8.5	–2.0	128	4	2.42*
HK	7.1	4.4	5.5	4.2	4.2	3.5	3.3	3.6	1,732	8,632	17.61**
ID	12.5	6.7	4.6	7.6	9.9	5.2	3.6	0.9	205	237	7.21**
IN	8.9	5.0	9.9	4.3	12.9	3.1	5.4	1.2	72	20	4.14**
JP	8.1	8.6	6.8	8.7	5.0	11.0	3.8	0.8	1,120	79,220	12.56**
KR	6.8	3.5	5.2	3.5	5.4	3.0	7.0	4.1	1,151	41	4.43**
MY	10.8	6.1	9.3	5.2	10.9	2.6	6.2	1.4	99	55	3.97**
NZ	5.3	3.9	5.1	4.0	3.8	2.5	2.3	1.8	306	1,829	3.63**
PH	12.5	5.7	9.4	6.3	9.6	4.1	5.2	1.9	175	12	1.35
SG	7.4	5.4	5.3	4.3	3.4	3.5	2.4	3.6	1,830	1,498	12.59**
TH	8.0	4.4	7.0	3.0	4.4	2.4	3.1	2.2	113	114	9.96**
TW	7.0	4.8	4.0	4.6	3.1	1.8	2.5	0.5	22	137	2.65**

[a] In years.

[b] Foreign currency bonds issued by residents.

[c] Local currency bonds issued by non-residents, ie bonds denominated in the specified currency and issued by non-residents.

[d] Wilcoxon-Mann-Whitney test; ** and * indicate that the null hypothesis – ie that the two sets of observations do not differ systematically from each other – is rejected at the 99% and 95% confidence levels, respectively.

Table 7

Fixed versus floating rate structure[a]

	Mean: size-weighted		Mean: equal-weighted		Standard deviation		Skewness		Number of observations		*W* test stat[d]
	FC by res[b]	LC by non-res[c]	FC by res[b]	LC by non-res[c]	FC by res[b]	LC by non-res[c]	FC by res[b]	LC by non-res[c]	FC by res[b]	LC by non-res[c]	
AU	1.6	1.2	1.4	1.1	0.5	0.3	0.5	3.4	10,016	9,976	51.38**
CN	1.3	1.0	1.4	1.0	0.5	0.0	0.3	.	128	4	1.70
HK	1.4	1.2	1.3	1.2	0.5	0.4	0.9	1.7	1,732	8,632	12.65**
ID	1.1	1.4	1.2	1.5	0.4	0.5	2.0	0.0	205	237	7.59**
IN	1.3	1.4	1.4	1.7	0.5	0.5	0.4	–0.7	72	20	1.94
JP	1.1	1.2	1.4	1.2	0.5	0.4	0.5	1.5	1,120	79,220	14.57**
KR	1.3	1.0	1.5	1.1	0.5	0.3	–0.1	2.8	1,151	41	4.48**
MY	1.1	1.1	1.3	1.2	0.5	0.4	0.9	1.9	99	55	1.77*
NZ	1.5	1.1	1.5	1.1	0.5	0.3	–0.1	2.9	306	1,829	19.40**
PH	1.1	1.1	1.2	1.2	0.4	0.4	1.7	2.1	175	12	0.08
SG	1.3	1.2	1.2	1.2	0.4	0.4	1.7	1.5	1,830	1,498	1.18
TH	1.3	1.1	1.4	1.0	0.5	0.2	0.5	5.1	113	114	6.41**
TW	1.7	1.1	1.8	1.2	0.4	0.4	–1.4	1.3	22	137	5.16**

[a] 1 = fixed rate bond; 2 = floating rate bond.

[b] Foreign currency bonds issued by residents.

[c] Local currency bonds issued by non-residents, ie bonds denominated in the specified currency and issued by non-residents.

[d] Wilcoxon-Mann-Whitney test; ** and * indicate that the null hypothesis – ie that the two sets of observations do not differ systematically from each other – is rejected at the 99% and 95% confidence levels, respectively.

Table 8

Eurobond versus foreign bond[a]

	Mean: size-weighted		Mean: equal-weighted		Standard deviation		Skewness		Number of observations		*W* test stat[d]
	FC by res[b]	LC by non-res[c]	FC by res[b]	LC by non-res[c]	FC by res[b]	LC by non-res[c]	FC by res[b]	LC by non-res[c]	FC by res[b]	LC by non-res[c]	
AU	1.1	1.3	1.0	1.0	0.2	0.2	5.2	4.5	10,016	9,976	3.38**
CN	1.3	1.6	1.4	1.8	0.5	0.5	0.6	–2.0	128	4	1.54
HK	1.1	1.1	1.0	1.1	0.1	0.2	7.7	4.1	1,732	8,632	6.32**
ID	1.0	1.0	1.1	1.0	0.2	0.0	3.8	.	205	237	3.77**
IN	1.2	1.2	1.2	1.1	0.4	0.3	1.5	2.9	72	20	1.09
JP	1.1	1.2	1.3	1.0	0.5	0.1	1.0	8.6	1,120	79,220	70.27**
KR	1.2	1.5	1.2	1.5	0.4	0.5	1.7	0.2	1,150	41	1.13
MY	1.2	1.7	1.2	1.4	0.4	0.5	1.4	0.3	99	55	2.55*
NZ	1.1	1.1	1.1	1.0	0.2	0.2	4.0	6.0	306	1,829	2.54*
PH	1.1	1.3	1.1	1.2	0.3	0.4	2.9	2.1	175	12	0.84
SG	1.0	1.2	1.0	1.1	0.1	0.2	9.4	4.1	1,830	1,498	6.82**
TH	1.4	1.7	1.3	1.2	0.4	0.4	1.1	1.5	113	114	1.13
TW	1.3	1.7	1.2	1.7	0.4	0.4	1.8	–1.1	22	137	5.18**

[a] 1 = eurobond; 2 = foreign or global bond.

[b] Foreign currency bonds issued by residents.

[c] Local currency bonds issued by non-residents, ie bonds denominated in the specified currency and issued by non-residents.

[d] Wilcoxon-Mann-Whitney test; ** and * indicate that the null hypothesis – ie that the two sets of observations do not differ systematically from each other – is rejected at the 99% and 95% confidence levels, respectively.

Table 9

Single bond versus medium-term note programme[a]

	Mean: size-weighted		Mean: equal-weighted		Standard deviation		Skewness		Number of observations		*W* test stat[d]
	FC by res[b]	LC by non-res[c]	FC by res[b]	LC by non-res[c]	FC by res[b]	LC by non-res[c]	FC by res[b]	LC by non-res[c]	FC by res[b]	LC by non-res[c]	
AU	1.5	1.5	1.9	1.9	0.3	0.3	–2.6	–3.2	10,016	9,976	6.44**
CN	1.0	1.0	1.0	1.0	0.0	0.0	.	.	128	4	.
HK	1.5	1.8	1.9	1.9	0.3	0.3	–2.5	–3.4	1,732	8,632	5.43**
ID	1.2	1.9	1.6	1.9	0.4	0.2	–0.5	–3.9	205	237	8.43**
IN	1.1	1.8	1.2	1.9	0.4	0.3	1.4	–2.9	72	20	5.52**
JP	1.1	4.7	1.2	2.0	0.4	0.2	1.9	–4.4	1,120	79,920	115.02**
KR	1.3	1.4	1.5	1.5	0.5	0.5	0.2	0.2	1,151	41	12.98**
MY	1.0	1.2	1.1	1.5	0.3	0.5	3.1	–0.1	99	55	6.19**
NZ	1.6	1.7	1.8	1.9	0.4	0.3	–1.9	–2.4	306	1,829	2.00*
PH	1.1	1.7	1.2	1.8	0.4	0.5	1.5	–1.3	175	12	4.32**
SG	1.4	1.7	1.9	1.9	0.3	0.3	–3.3	–3.4	1,830	1,498	0.15
TH	1.1	1.3	1.3	1.8	0.5	0.4	0.7	–1.4	113	114	6.99**
TW	1.1	1.0	1.4	1.1	0.5	0.3	0.4	2.3	22	137	3.34**

[a] 1 = bond issued with its own documentation; 2 = bond issued as part of an MTN programme.

[b] Foreign currency bonds issued by residents.

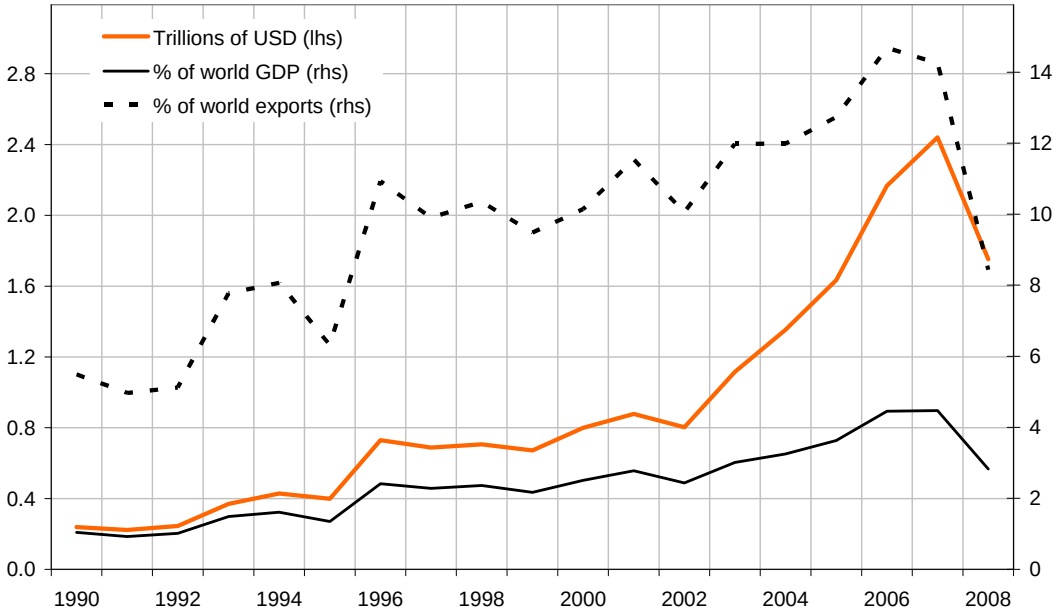
[c] Local currency bonds issued by non-residents, ie bonds denominated in the specified currency and issued by non-residents.

[d] Wilcoxon-Mann-Whitney test; ** and * indicate that the null hypothesis – ie that the two sets of observations do not differ systematically from each other – is rejected at the 99% and 95% confidence levels, respectively.

Figures

Figure 1

Gross issuance of foreign currency bonds[a]

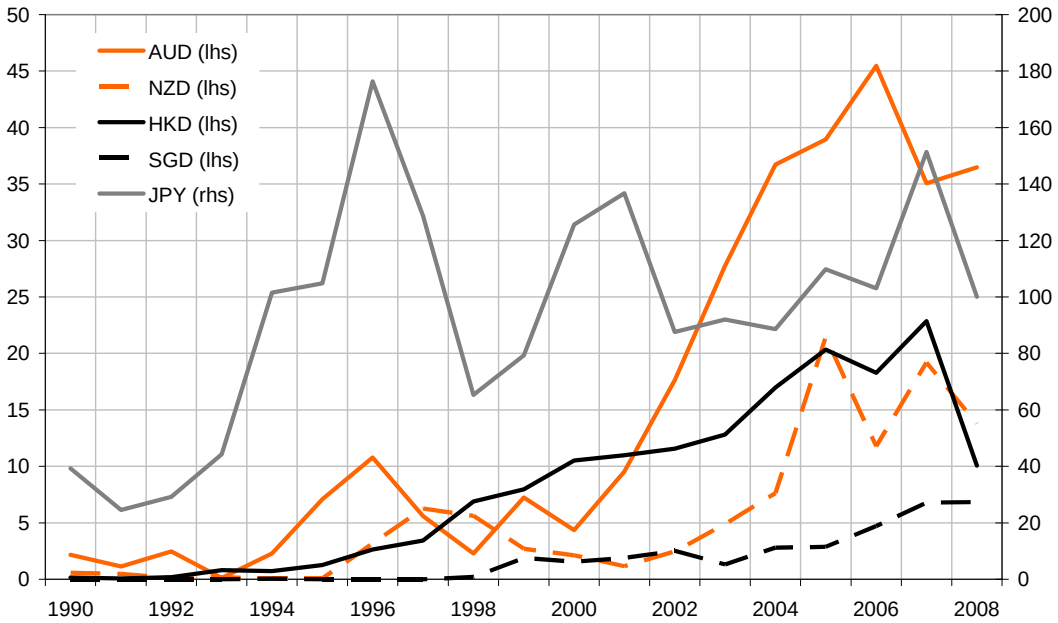


[a] Bonds and medium-term notes denominated in a currency different from that of the territory where the issuer principally resides.

Sources: IMF; Dealogic; Euroclear; ICMA; Thomson Financial; BIS; authors' calculations.

Figure 2a

Gross issuance of foreign currency bonds denominated in Asia-Pacific currencies[a]

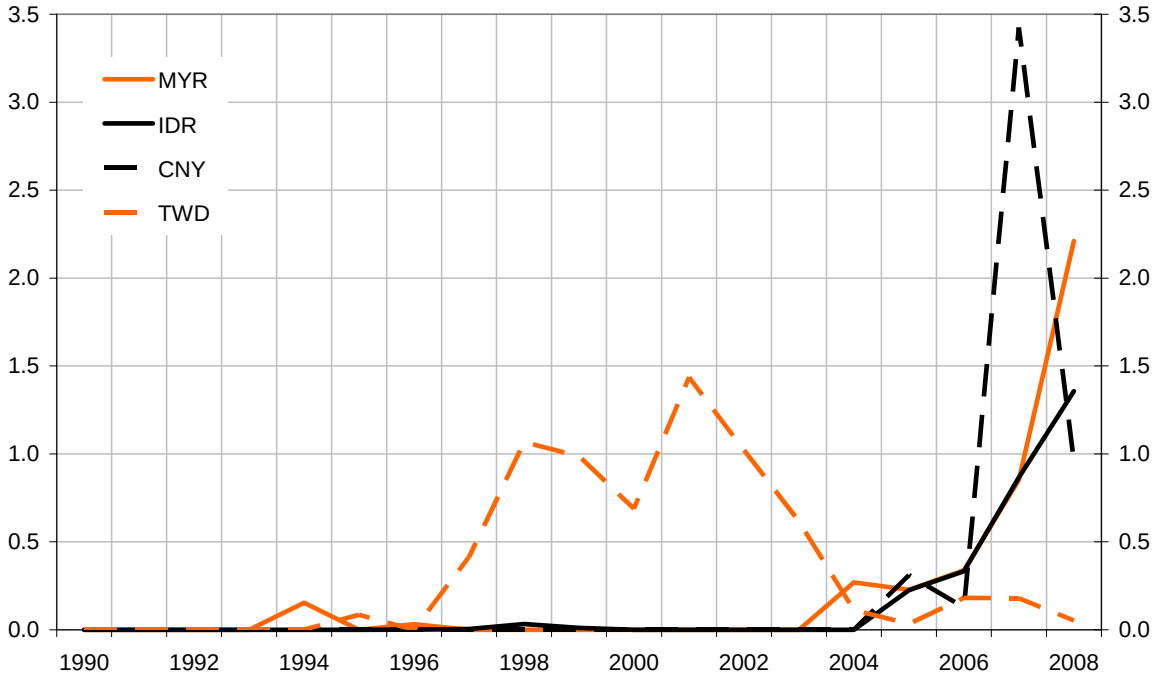


[a] In billions of constant 2008 US dollars.

Sources: IMF; Dealogic; Euroclear; ICMA; Thomson Financial; BIS; authors' calculations.

Figure 2b

Gross issuance of foreign currency bonds denominated in Asia-Pacific currencies[a]

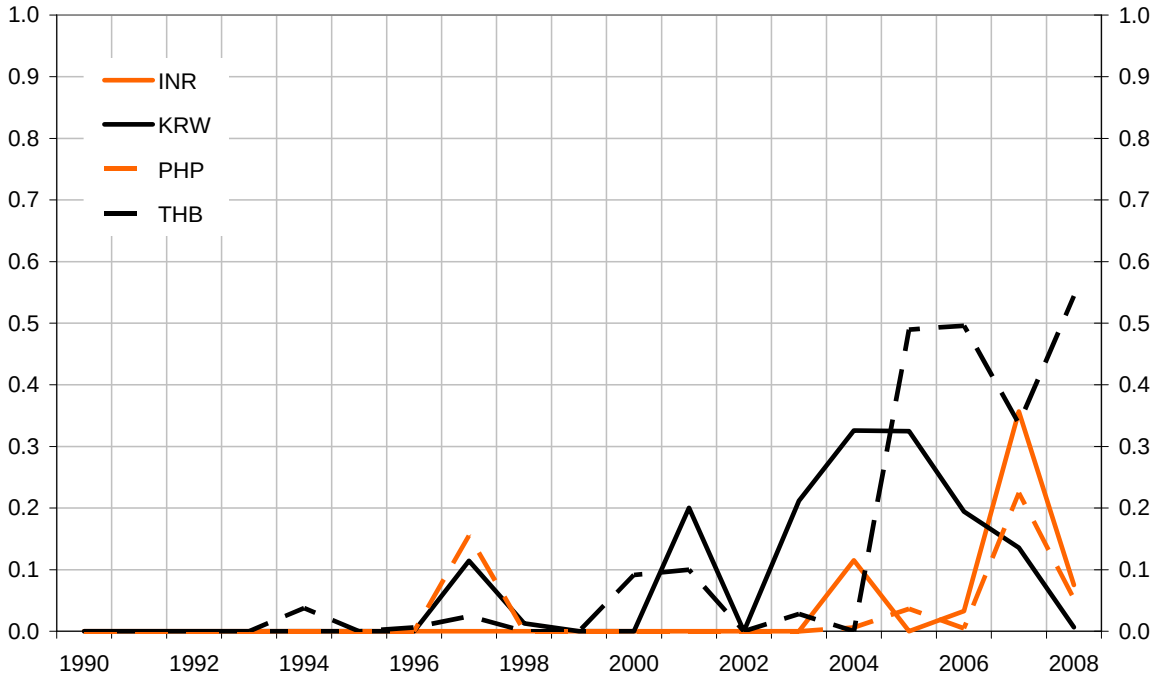


[a] In billions of constant 2008 US dollars.

Sources: IMF; Dealogic; Euroclear; ICMA; Thomson Financial; BIS; authors' calculations.

Figure 2c

Gross issuance of foreign currency bonds denominated in Asia-Pacific currencies[a]

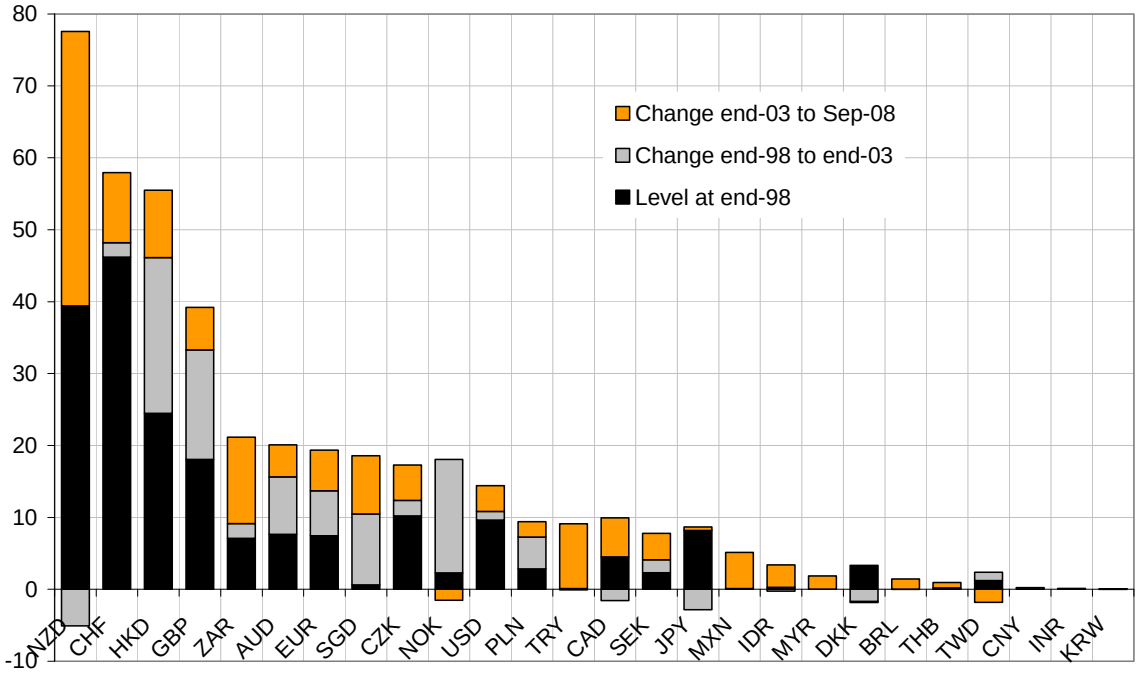


[a] In billions of constant 2008 US dollars.

Sources: IMF; Dealogic; Euroclear; ICMA; Thomson Financial; BIS; authors' calculations.

Figure 3

Participation of non-resident issuers in local currency markets[a]

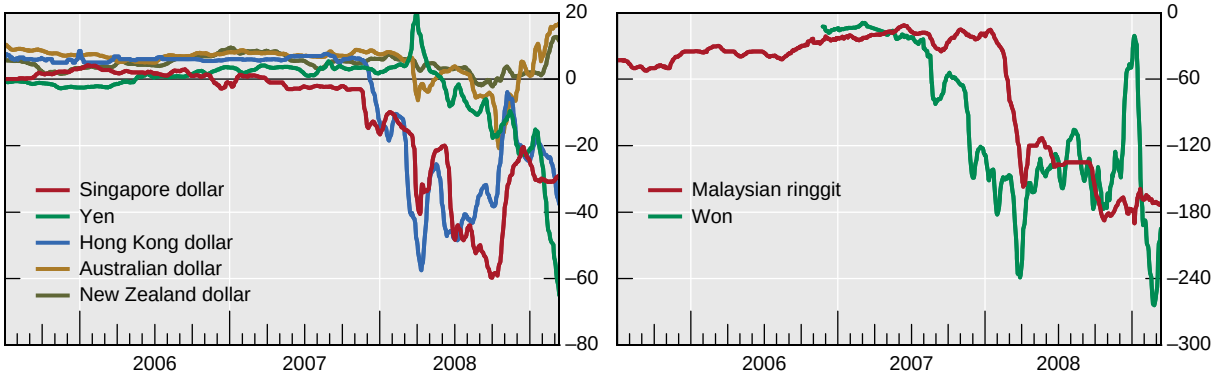


[a] Outstanding stock of debt securities issued by non-residents in the specified currency as a percentage of all debt securities issued in the specified currency. Data on residents' and non-residents' issues are from different sources and may be incomplete.

Sources: Dealogic; Euroclear; ICMA; national data; BIS; authors' calculations.

Figure 4

Cross-currency basis swap spreads[a]

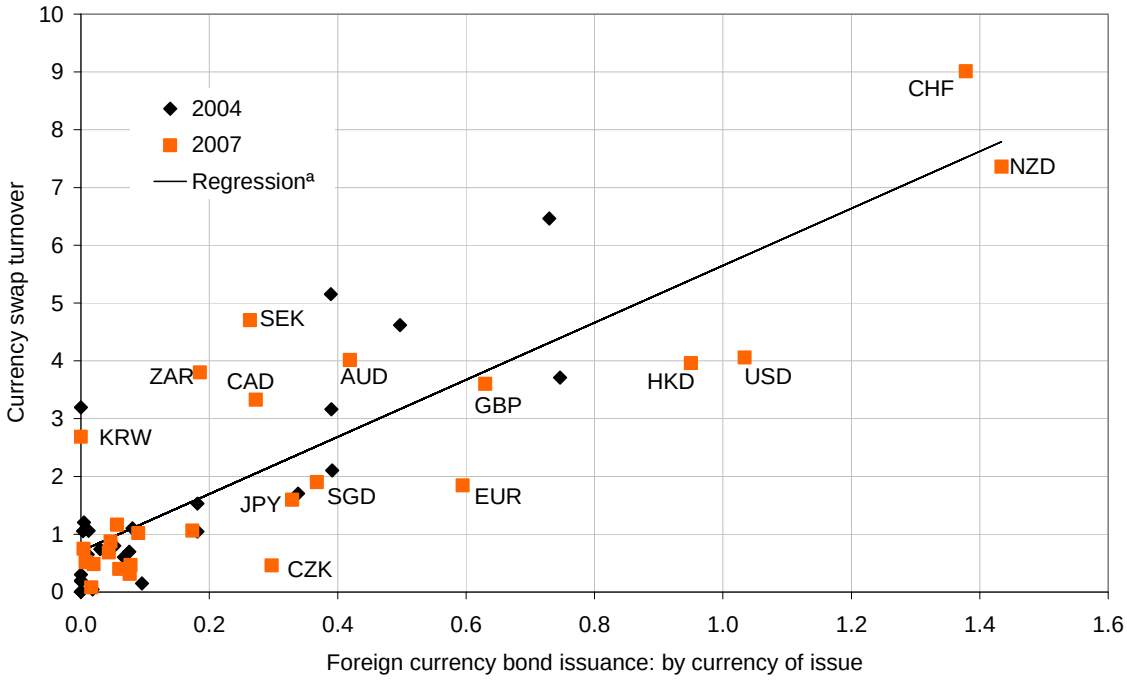


[a] Spread to borrow the specified currency in exchange for lending USD at Libor. Five-year indicative spreads, in basis points; 10-day moving average.

Source: Bloomberg.

Figure 5a

Correlation between currency swap turnover and foreign currency bond issuance (by currency of issue)[b]



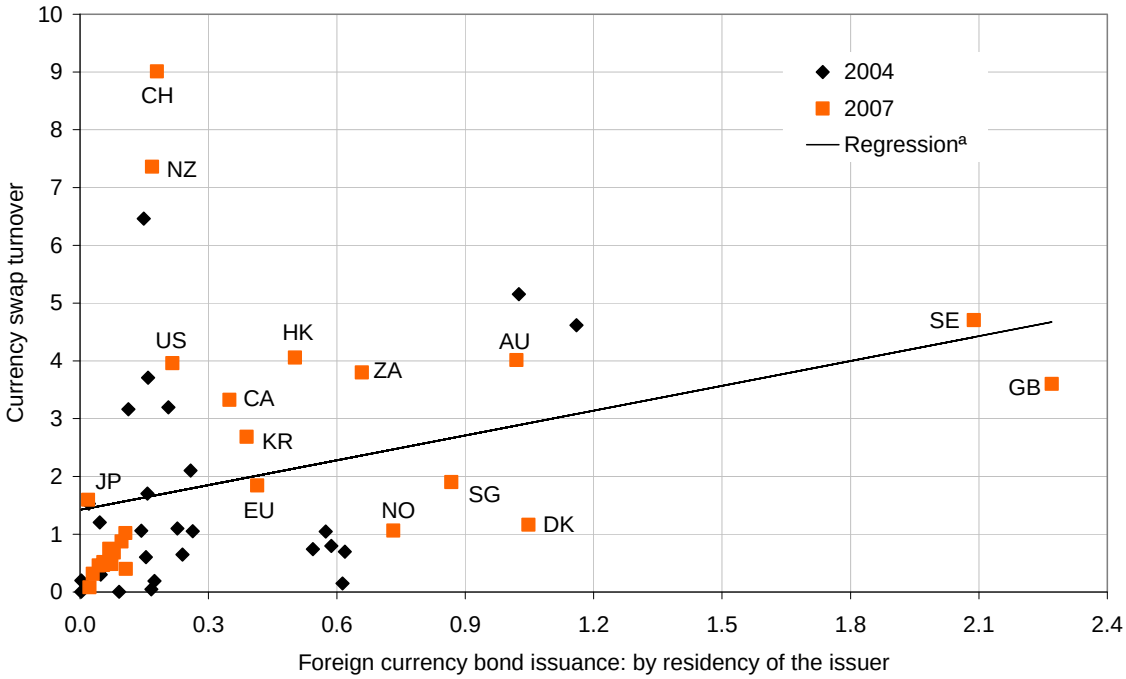
[a] Intercept = 0.7076 (*t*-statistic = 3.7085); slope coefficient = 4.9415 (*t*-statistic = 11.0291); *n* = 52; *r2* = 0.7087.

[b] Horizontal axis: monthly gross issuance (during the April–June period of the year specified) by non-residents of bonds and notes denominated in the specified currency, as a percentage of national annual GDP; vertical axis: monthly turnover (in April of the year specified) of currency swaps denominated in the specified currency, as a percentage of national annual GDP.

Sources: BIS Triennial Central Bank Survey; IMF; Dealogic; Euroclear; ICMA; authors' calculations.

Figure 5b

Correlation between currency swap turnover and foreign currency bond issuance (by residency of the issuer)[b]



[a] Intercept = 1.4200 (*t*-statistic = 4.1549); slope coefficient = 1.4320 (*t*-statistic = 2.5231); *n* = 52; *r2* = 0.1129.

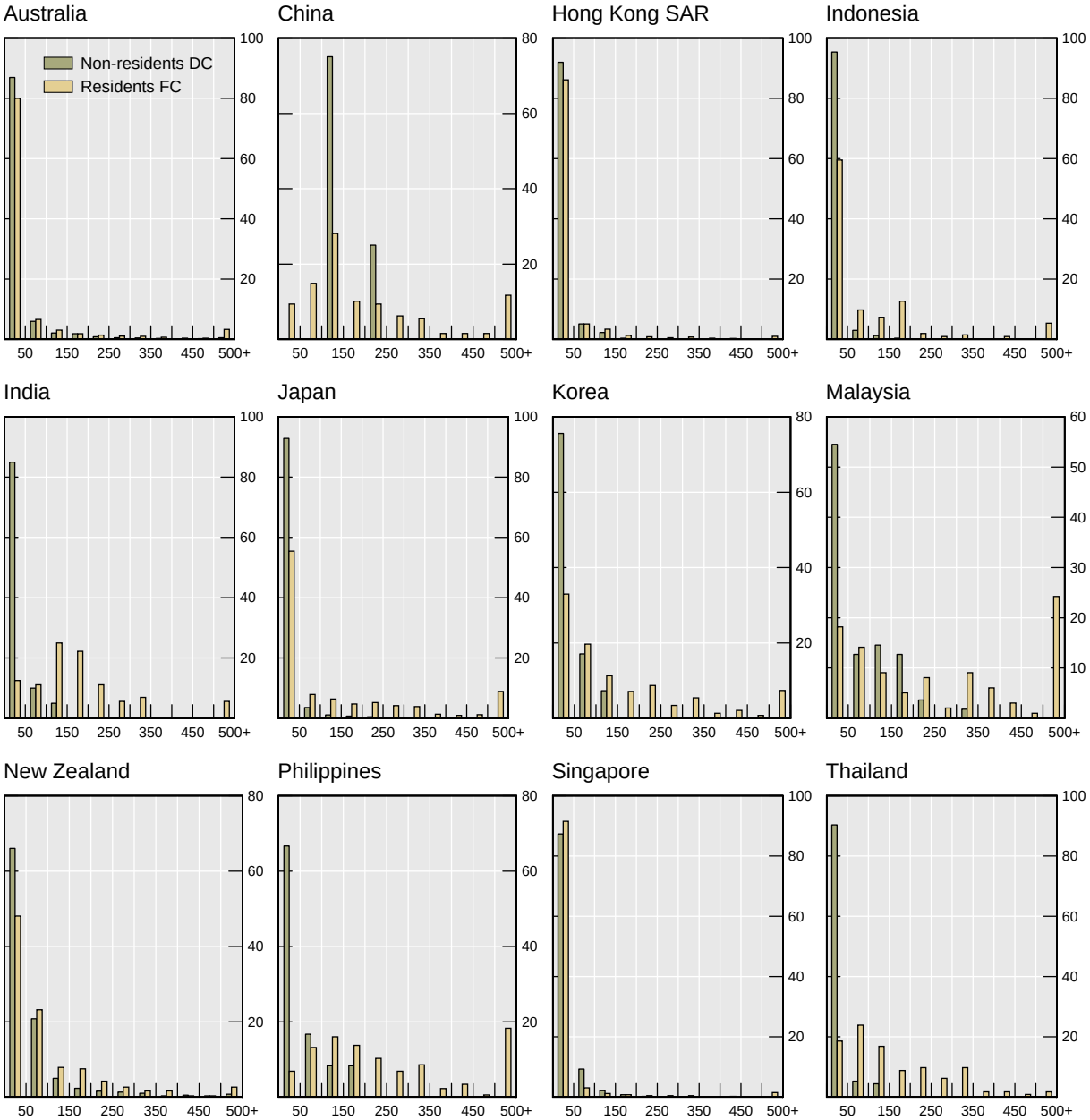
[b] Horizontal axis: monthly gross issuance (during the April–June period of the year specified) of bonds and notes denominated in foreign currencies by residents of the specified countries, as a percentage of national annual GDP; vertical axis: monthly turnover (in April of the year specified) of currency swaps denominated in the local currency of the specified country, as a percentage of national annual GDP.

Sources: BIS Triennial Central Bank Survey; IMF; Dealogic; Euroclear; ICMA; authors' calculations.

Figure 6

Issue size[a]

Foreign currency bonds issued by residents versus local currency bonds issued by non-residents



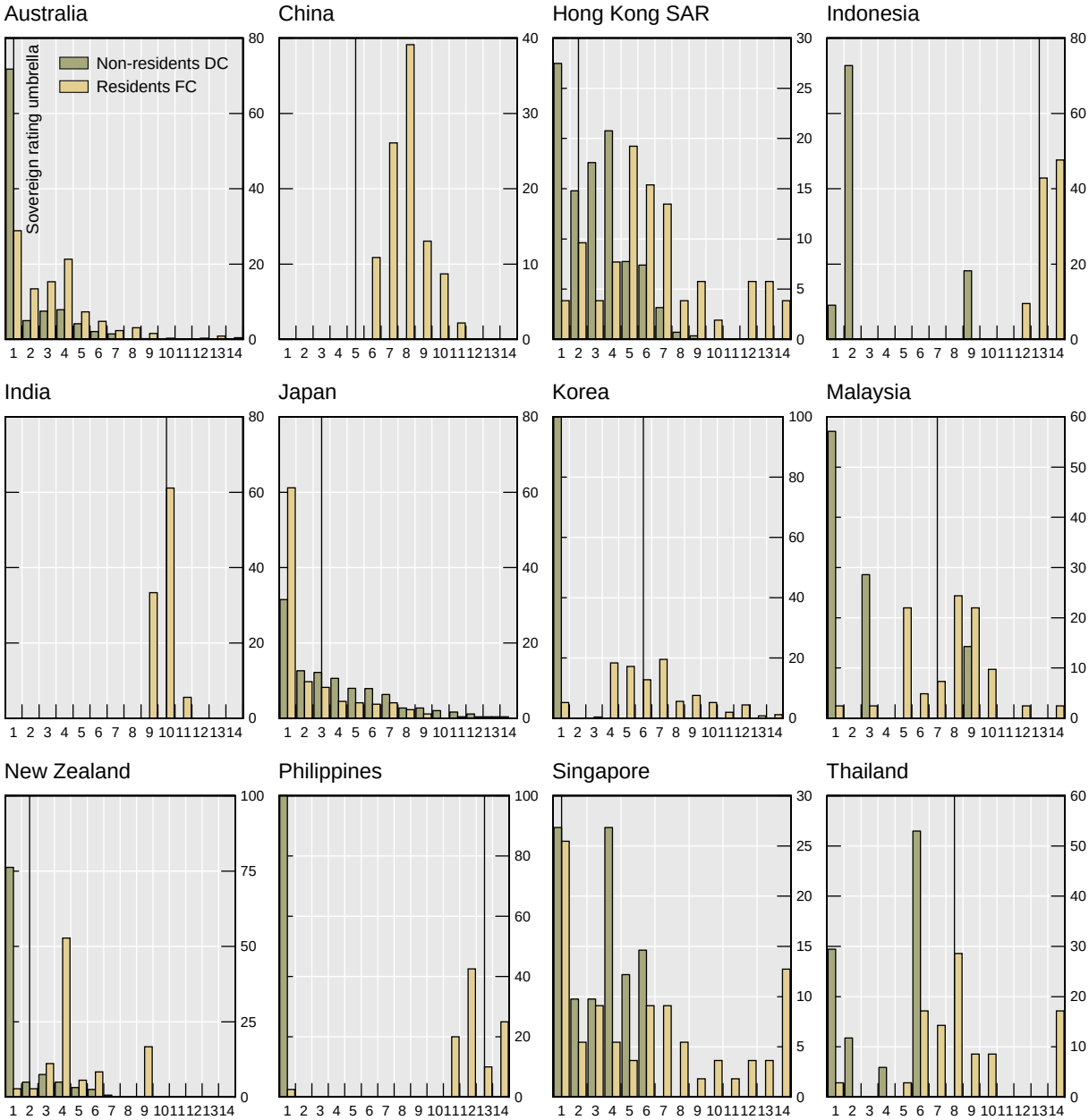
DC = local currency; FC = foreign currency.

[a] Horizontal axis = issue size, in millions of US dollars; vertical axis = percentage of bonds.

Figure 7

Credit ratings

Foreign currency bonds issued by residents versus local currency bonds issued by non-residents



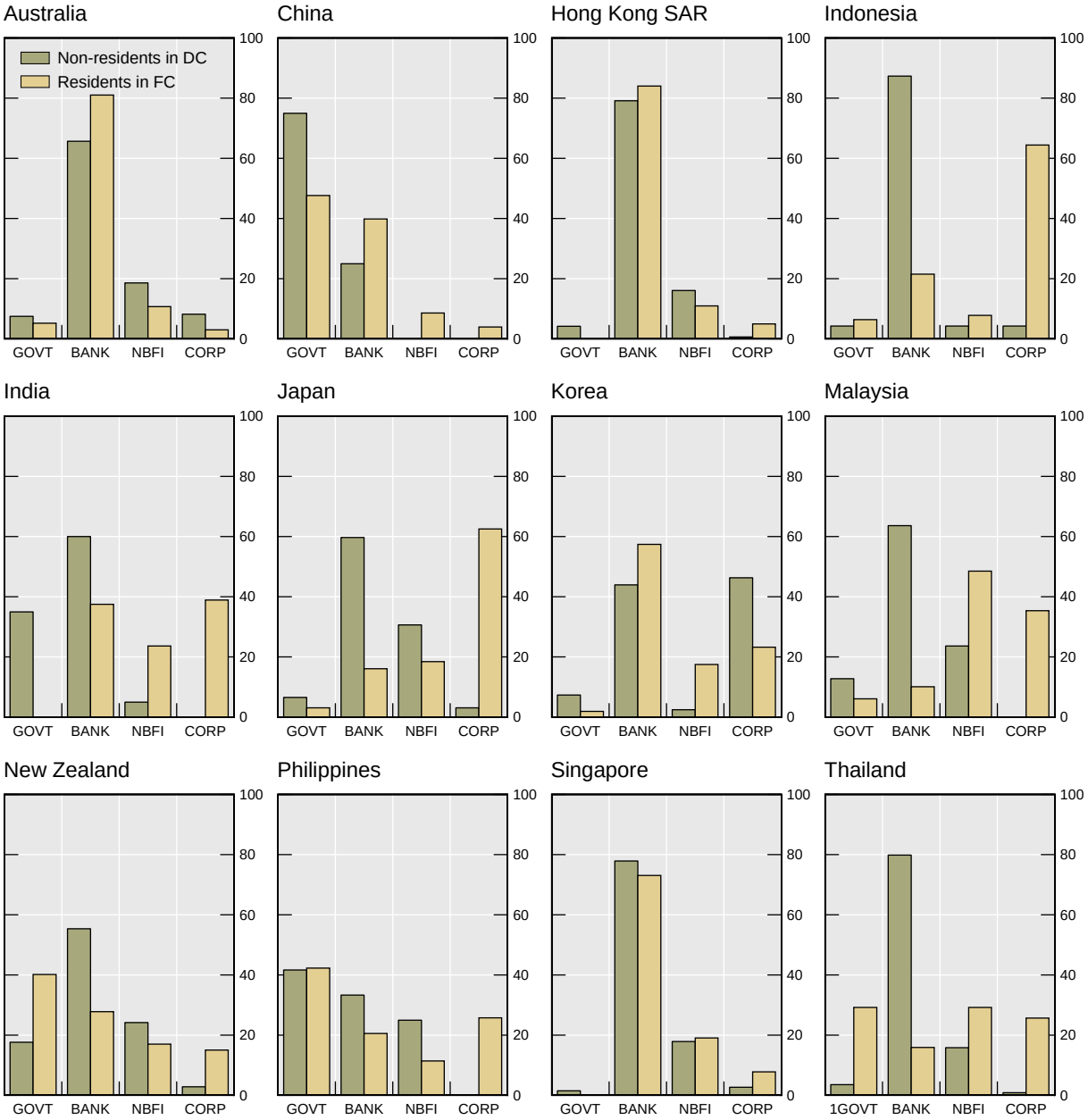
DC = local currency; FC = foreign currency.

[a] 1 = AAA/Aaa; 2 = AA+/Aa1; 3 = AA/Aa2; 4 = AA–/Aa3; 5 = A+/A1; 6 = A/A2; 7 = A–/A3; 8 = BBB+/Baa1; 9 = BBB/Baa2; 10 = BBB–/Baa3; 11 = BB+/Ba1; 12 = BB/Ba2; 13 = BB–/Ba3; 14 = lower than BB–/Ba3.

Figure 8

Industry sector of issuer[a]

Foreign currency bonds issued by residents versus local currency bonds issued by non-residents



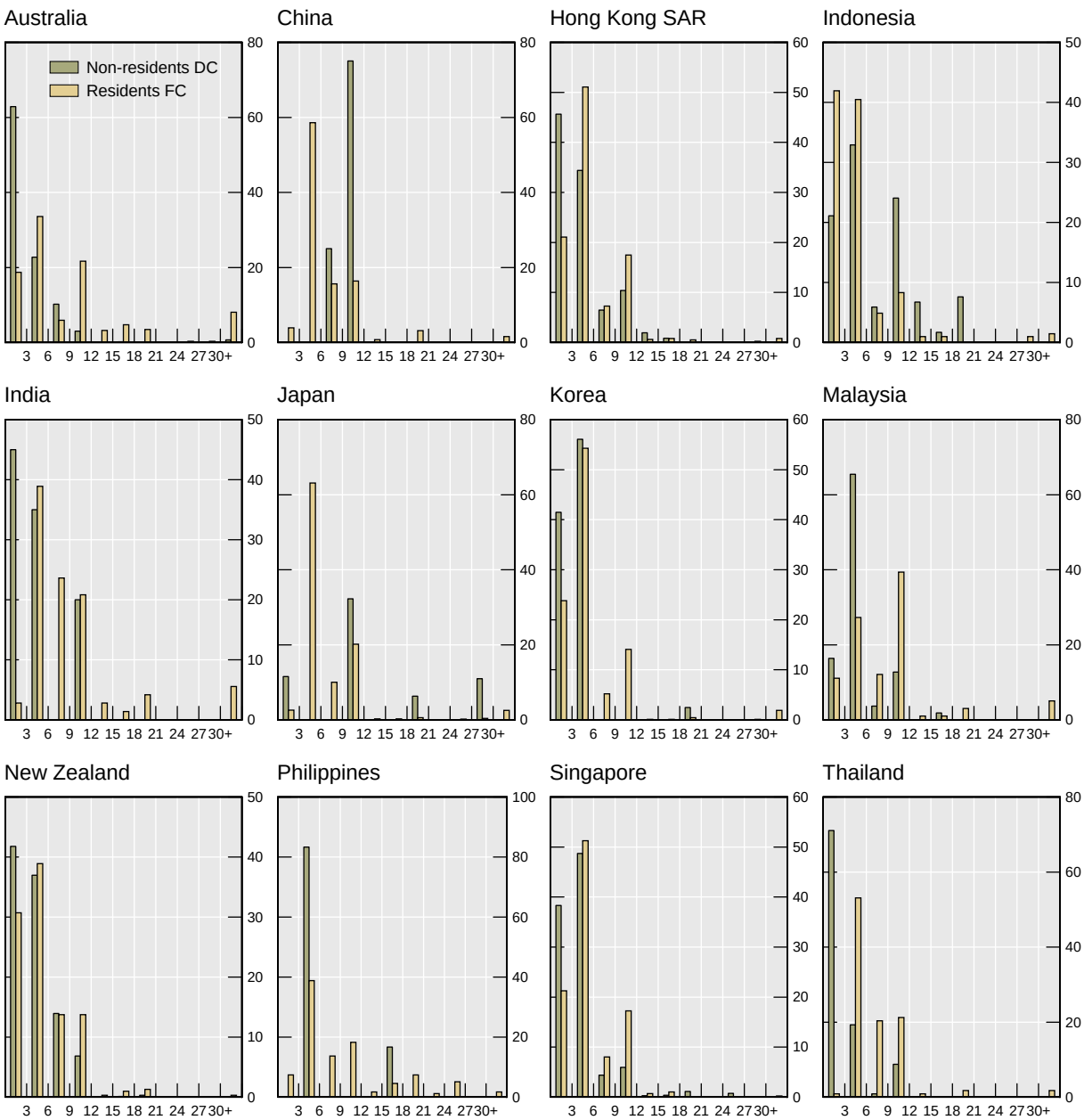
DC = local currency; FC = foreign currency.

[a] GOVT = supranational institutions, central governments and sub-national governments; BANK = banks; NBFI = non-bank financial institutions; CORP = non-financial corporations.

Figure 9

Maturity[a]

Foreign currency bonds issued by residents versus local currency bonds issued by non-residents



DC = local currency; FC = foreign currency.

[a] In years. "30+" refers to bonds of maturity equal to or greater than 30 years.

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The euro: internationalised at birth

Frank Moss[1]

I. Introduction

The birth of an international currency can be defined as the point in time at which a currency starts meaningfully assuming one of the traditional functions of money outside its country of issue.[2] In the case of most currencies, this is not straightforwardly attributable to a specific date. In the case of the euro, matters are different for at least two reasons. First, internationalisation takes on a special meaning to the extent that the euro, being the currency of a group of countries participating in a monetary union is, by definition, being used outside the borders of a single country. Hence, internationalisation of the euro should be understood as non-residents of this entire group of countries becoming more or less regular users of the euro. Second, contrary to other currencies, the launch point of the domestic currency use of the euro (1 January 1999) was also the start date of its international use, taking into account the fact that it had inherited such a role from a number of legacy currencies that were issued by countries participating in Europe's economic and monetary union (EMU).

Taking a somewhat broader perspective concerning the birth period of the euro, this paper looks at evidence of the euro's international use at around the time of its launch date as well as covering subsequent developments during the first decade of the euro's existence. It first describes the birth of the euro as an international currency, building on the international role of its predecessor currencies (Section II). It then presents a number of stylised facts that have characterised the euro's role abroad during the first 10 years of EMU (Section III). It subsequently turns to an analysis of the most recent data and provides some preliminary thoughts on the possible impact of the global financial crisis on the euro's international role (Section IV). Section V concludes.

II. The international legacy of the euro's predecessors

Before the launch of the euro, the European Monetary Institute (EMI) was leading intensive technical and policy preparations for the future monetary union in Europe. Core activities of the EMI Council and staff at that time included the preparation of the ECB's monetary policy strategy and its operational framework, the setup of an area-wide payment system, the design, printing and circulation modalities of the euro banknotes, and the assessment of the state of preparedness of the EU member states to join the single currency area. Questions on currency internationalisation, whether the euro would also play a role outside the future euro area, and how that might have an impact on the euro area, did not figure in the list of priorities and were hardly discussed.

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[1] Director General for International and European Relations at the European Central Bank. The author would like to thank T Bracke and A Geis for their research assistance, and the participants in the seminar at the Bank of Korea for their discussion of an earlier draft. The views expressed in this paper are those of the author and do not necessarily reflect the views or the policy of the European Central Bank.

[2] See Cohen (1971) for the classical distinction between the private and public use of money in its three functions of unit of account, means of payment and store of value. See Kenen (2009) for a more elaborate description.

At the same time, it was clear from the outset that the euro was bound to be used also outside the euro area borders. Indeed, the euro was predisposed to almost mechanically inherit some of the international functions of its legacy currencies, such as the circulation of Deutsche mark banknotes across eastern Europe, the role of the French franc as an exchange rate anchor in some parts of the world, or the role that some smaller currencies such as the Dutch guilder were also playing in global bond markets or in official currency reserves. In addition, the euro was to become the successor currency to the ECU, which was a basket of EU component currencies that was used as international money in its own right, by both public and private users. To the extent that some of those users were residents of countries other than the ones joining the euro area, the international use of the euro was also predestined to occur as from its birth.

From this "flying start" position in 1999, however, the future direction of the euro's international role was uncertain, with some academics and opinion makers predicting a structural increase in the euro's international role over the medium to longer term and others projecting a continued strong "hegemony" of the US dollar over the next decades. But even as regards the very short term, opinions diverged on whether the euro would remain as prominent an international currency as the sum of its legacy currencies, ie the national ones and the ECU combined.[3] Two known unknowns were at play in weighing the short-term prospect of the euro's international use immediately after its launch in 1999: first, whether the weight of the euro in international markets after 1999 would continue to equal the sum of the shares of the national currencies until 1998; and second, which attitude the central bank issuing the euro, ie the ECB, would adopt as regards the international role of the euro, taking into account, notably, the views of the central bank that issued the most internationally used legacy currency of the euro, ie the Deutsche Bundesbank.

Concerning the first known unknown, the central scenario was one of an initial, though temporary, fall in the euro's international use, compared with that of the sum of its legacy currencies, followed by a gradual but steady recovery. Underpinning this scenario were the following three sets of arguments. First, a statistical reason: because a number of international currency transactions involved non-residents of different countries that would join the euro area, such transactions would, by definition, become domestic currency transactions after the start of monetary union.[4] Second, an economic reason: because the euro area policymakers, and in particular its monetary policymaker issuing the euro, would first have to gain credibility before investors started considering the euro as good as the most credible legacy currencies previously, international demand for the new currency was likely to be hesitant and reflect a "wait-and-see" attitude. Indeed, some observers, especially those most sceptical about the EMU project, put emphasis on the fact that the euro's international status could be expected to suffer from uncertainty about the euro area's monetary policy (to be conducted centrally by a new, and hence unknown, institution) and its fiscal policy (to be conducted decentrally in the context of a new, and hence untested, framework, ie the Stability and Growth Pact). Third, a financial reason: because euro area policymakers still had to undertake a number of measures to build up a sufficiently wide and deep single money and capital market, international demand for the euro could be expected to be subdued at first.

It is interesting to observe that, judging from the experience of the first decade of the international use of the euro, this central scenario has only rarely played out. Indeed, a

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[3] Next to the ECU, these currencies are the Austrian schilling, the Belgian franc, the Deutsche mark, the Finnish markka, the French franc, the Irish pound, the Italian lira, the Luxembourg franc, the Dutch guilder, the Portuguese escudo and the Spanish peseta.

[4] See, for instance, Pollard (1997).

number of examples across market segments illustrate that the change from 11 national currencies to a single currency did not cause major ripples in the global use of currencies:

- In the foreign exchange reserves of central banks, the share of euro legacy currencies[5] amounted to 15.9% before the changeover to the euro (end-1998 figures), while the share of the euro was 14.0% in March 1999. The slight decline in this share was almost exclusively due to a statistical effect – namely, that a sizeable part of euro area member states' foreign exchange reserves (primarily Deutsche mark) had to be reclassified as domestic assets with the introduction of the euro.[6] Beyond this effect, the shift to the euro does not seem to have triggered any particular diversification of foreign exchange reserve portfolios.
- In foreign exchange markets, the role of the euro stayed relatively unchanged compared to that of its predecessors. The 2001 BIS Triennial Central Bank Survey indicates a share of the euro of 18.8% in total reported transactions, against a combined 18.2% for the Deutsche mark, the French franc and the ECU in the previous survey of April 1998. Absolute turnover levels, however, had declined on the foreign exchange market, on account of the elimination of intra-EMS currency trading.[7]
- In the market for international bond issuance, by contrast, there were some more pronounced shifts around the time of the euro's introduction. In the five years preceding the euro's introduction, euro legacy currencies accounted for between 19.9 and 32.4% of total issuance volumes, whereas the euro's share after its launch fluctuated between 30.1 and 40.1% up to late 2002, before increasing considerably further, peaking at 54.0% in the second quarter of 2005 and never falling short of 37.1% since then. The issuance of debt securities therefore stands out as one of the areas in which the new single currency swiftly gained popularity compared with the legacy currencies. A look at higher-frequency data covering the first half of 1998 and the first half of 1999 confirms the picture of a jump, rather than a dip, in the euro's use in the domain of international debt securities issuance. This assessment holds, irrespective of whether one takes a narrow definition of such issuance, which focuses on the financing currency function, or a broad definition, which focuses on both the financing and the investment currency function.[8]

Coming to the second known unknown at the time of the launch of the euro – the attitude which the ECB would adopt vis-à-vis the international role of the currency it was issuing – the question essentially boiled down to whether the euro's "takeover" of national legacy currencies in their international role, in particular that of the Deutsche mark, would also lead the ECB to espouse some of the policy views held on the internationalisation of currencies within Europe's central banking community, especially by the Deutsche Bundesbank. The Bundesbank, being the central bank of the second most widely used international currency after the US dollar, regularly monitored developments in the cross-border use of the

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[5] Sum of the Deutsche mark (12.9%), the ECU (1.4%), the French franc (1.3%) and the Dutch guilder (0.3%). A currency breakdown for foreign exchange reserves held in the remaining euro legacy currencies is unavailable.

[6] Adjusting for this effect, IMF estimates suggest that the euro's share in global foreign exchange reserves in March 1999 corresponded to that in December 1998.

[7] See Galati (2001).

[8] A narrow definition only covers debt securities issues in currencies other than that of the country in which the borrower resides; a broad definition, in addition, covers debt securities issued in the currency of the country of residence of the borrower, provided they are targeted at non-resident investors. For further details, see ECB (1999).

Deutsche mark. A number of articles in the bank's *Monthly Reports* documented the growing role of the mark from a currency that was hardly used internationally in the aftermath of the Second World War to the second most widely used international currency in the 1980s and 1990s.[9] While the Bundesbank did not formulate comprehensive public views about its policy towards this internationalisation of the mark, various elements suggest a rather prudent to negative stance. Until the early 1980s, the Bundesbank clearly attempted to moderate the international use of the Deutsche mark, mainly through restrictions on capital inflows, as currency internationalisation was seen to complicate the conduct of its monetary policy. In 1968, for instance, the Bundesbank entered into a "gentleman's agreement" with German banks that aimed at limiting the issuance of foreign Deutsche mark bonds by stipulating that only German banks could lead syndicates for Deutsche mark-denominated bonds and by making the volume of issues subject to the approval of a central capital-market committee.[10]

Throughout the 1990s, however, this restrictive policy lost effectiveness, as capital controls were gradually lifted. In addition, the Bundesbank's successful track record in terms of price stability unavoidably enhanced the mark's attractiveness and irresistibly propelled it to the position of second most widely used international currency.[11] That said, having a currency subjected to growing international use continued to carry with it the concern that non-residents might be in a position to acquire a significant amount of the country's liquid liabilities, which could provoke large-scale capital inflows with adverse implications for monetary policy control of broader policy objectives. Likewise, during bouts of uncertainty about the direction of the country's economic policy, the risk of a run on the currency would be greater in case of a large international use and the efforts needed to maintain the confidence of foreign investors commensurately larger.[12]

Although the French franc also fulfilled some of the functions of an international currency, the Bank of France was even less explicit in its policy views on the international role of its currency. This may be attributed to the fact that the French franc was first and foremost assuming official, rather than private, functions of money outside France, and policies on international monetary relations were accordingly determined by the French Treasury and government more generally. In international discussions on the global monetary system, for instance on the creation of global liquidity through the SDR in the 1960s, the French government took strong views on the need for a counterbalancing force to the US dollar. In specific regions, mainly in the countries with former colonial linkages, the French Treasury was the guardian of the international role of the franc. One prominent example was the agreement between the French Treasury and the countries of the CFA franc zone in Africa, whereby the Treasury stood ready to support the parity of the local currency in terms of the French franc.[13] The Bank of France assumed a supporting role, in the case of the CFA franc zone, through a close analysis of, and regular publications on, monetary and financial developments in the African countries concerned.

Early on after the launch of the euro, the ECB considered it necessary to develop and make explicit its policy views on the international role of the euro. In its *Monthly Bulletin* article of August 1999, the ECB made clear that "the internationalisation of the euro, as such, is not a policy objective" and that "it will be neither fostered nor hindered by the Eurosystem". At the same time, the article downplayed some of the fears regarding the potential negative implications of growing international use of the euro for its monetary policy conduct, which in

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9 See, for instance, Deutsche Bundesbank (1991) and (1997).

10 See Tavlas (1991).

11 See Frenkel and Goldstein (1999).

12 See also Marsh (1992).

13 See Hugon (1999).

the case of the Bundesbank and the Deutsche mark had probably been more justified, taking into account the relative size of the respective currency areas. In a nutshell, three sets of issues were addressed by the ECB – namely, the implications for the transmission mechanism of monetary policy, for the stability of money demand, and for the role of the exchange rate. For all three issues, a greater international use of the euro was considered to have effects that, on balance, should not lead to an overall negative assessment. It was, moreover, underlined that the ECB's monetary policy strategy, with its combination of an economic and a monetary analysis, was well equipped to take into account developments in terms of the international role of the euro. Finally, the neutral stance taken was also in recognition of the fact that it would be futile for policymakers, in a globalised world with increasingly integrated market-based financial systems and a floating exchange rate regime, to try to distinctly influence the use of the euro outside the euro area's borders. The internationalisation process should, in other words, remain the outcome of economic and financial developments, driven by the decisions of private market (and sometimes public) actors. Indeed, in terms of official use, the ECB fully expected the euro to perform a function as an international reserve currency, both de jure in the case of the countries participating in ERM II and de facto in the case of other currencies being pegged to the euro.

Of course, such a neutral attitude does not imply that the central bank, through some of its policies, cannot indirectly influence the international role of its currency. In the case of the ECB, its efforts to foster financial market integration in the euro area – by setting up, for instance, a particular financial market infrastructure or by stimulating the private sector to develop certain euro area-wide market instruments – is certainly of help in widening and deepening euro area money and capital markets that will raise the level of attractiveness for non-resident traders and investors of using the euro. Similarly, the conduct of a credible monetary policy aimed at maintaining price stability over the medium term can also be expected to have a positive impact on the attractiveness of the euro as an international store of value. However, these ECB policy objectives have exclusively domestic goals in mind, even though they may result in positive externalities for the international use of the euro.

That said, the neutral policy stance of the ECB vis-à-vis the international role of its currency should not be equated with an attitude of benign neglect. From very early on, the ECB – like some of the central banks issuing the legacy currencies of the euro – has been monitoring and analysing developments as regards the internationalisation of its currency, publishing its main findings in what have, broadly speaking, become annual reviews of the international role of the euro since 2001.

III. Stylised facts about the euro's international role

Having reviewed the starting period of the international use of the euro, which was altogether stronger than had been expected by the mainstream analysis prior to 1999, development during the first decade of the existence of the euro has been very much in line with what was anticipated. In essence, news on the international role of the euro has been largely unspectacular over the past 10 years.[14] The direction of change has been positive, and the euro has definitely become increasingly popular as a means of payment, as an investment currency or as an issuance currency. But the pace of change has been slow and gradual, confirming that the landscape of international currencies is characterised by considerable inertia and that the drivers of currency internationalisation are fundamental and slow-moving variables. As shown below, this inertia remained present even during the global financial

[14] See Moss (2009) for further details.

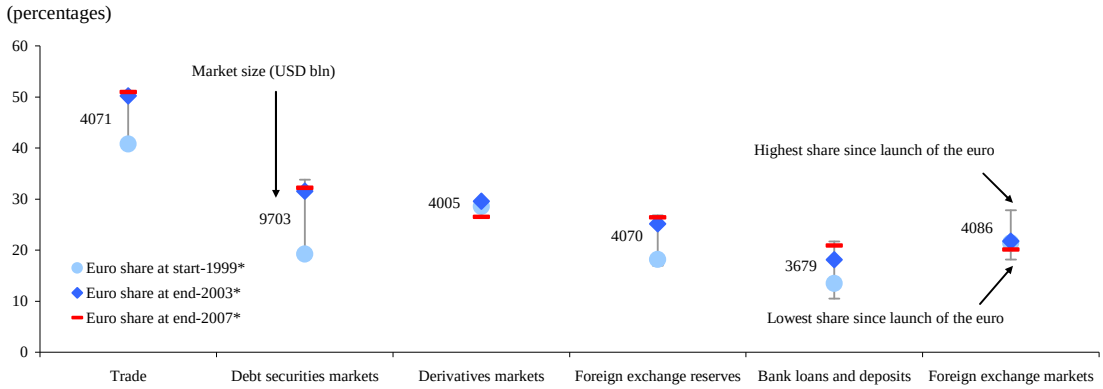
turmoil that started in mid-2007 and that turned into a global financial crisis in the last quarter of 2008.

When putting together the main findings which the ECB has expressed in its annual reviews on the international role of the euro, three key stylised facts on the use of the euro abroad can be derived.

Stylised fact no 1: the euro's international role has increased over time

The use of the euro outside the euro area borders is more important today than it was in 1999. The share of euro-denominated instruments in global financial markets (debt securities markets, derivatives markets, foreign exchange markets) has clearly increased over the past 10 years. This also holds for other domains of international currency usage, such as the currency denomination of trade, or the currency composition of official foreign exchange reserve holdings (see Figure 1). As a result, the euro has consolidated its role as the second international currency after the US dollar.

Figure 1: Share of the euro in different market segments



Sources: IMF, BIS, national sources and ECB calculations.
** or available data closest to that date.*

Stylised fact no 2: the increase was mainly concentrated in the first five years of the euro's existence

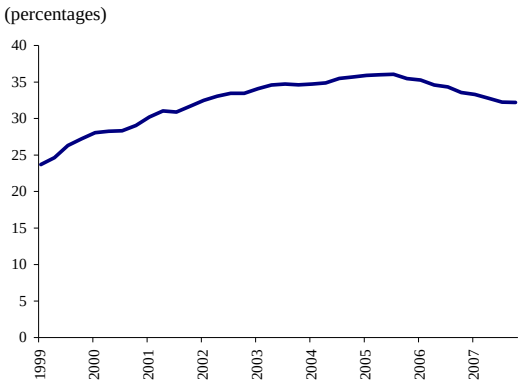
Notwithstanding the overall finding of a modestly upward-trending international use of the euro, it cannot be contested that, in the major market segments, the euro's international role had mostly advanced until around 2003–05, while it appears to have broadly stabilised subsequently or even slightly declined in some market segments:

- In the market for international debt securities, the share of the euro, net of valuation effects,[15] in the outstanding stock of debt securities from issuers located outside the euro area rose from close to 24% to more than 36% between the beginning of 1999 and mid-2005 (see Figure 2). Later, the share of the euro fell back to around 32% in the market for international debt securities by the end of 2007, mirroring, to a large extent, the vibrant financial environment in the United States (the latest evidence on developments into 2008 are provided in Section 3). This environment led to a

[15] The share of the euro in relation to the share of other widely used international currencies is considerably influenced by exchange rate movements of the euro against those currencies. Therefore, valuation effects stemming from exchange rate fluctuations are taken into account when assessing the euro's international status in the following analysis – ie where feasible, all data on shares are reported at constant exchange rates.

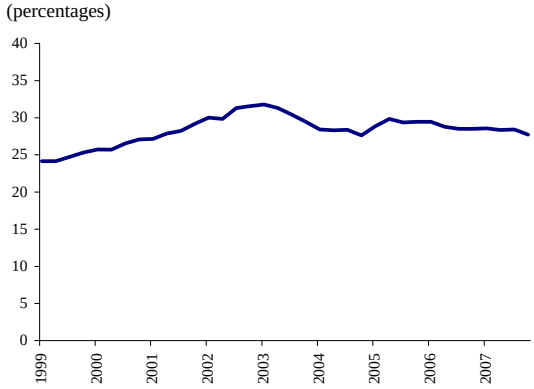
significant rise in US dollar-denominated international debt issuance in 2006 and 2007, which consequently reduced the prominence of the euro and even caused some retrenchment in the euro's share of the outstanding stock.

Figure 2: Share of the euro in the stock of international debt securities



Sources: BIS and ECB calculations.

Figure 3: Share of the euro in central banks' holdings of foreign exchange reserves



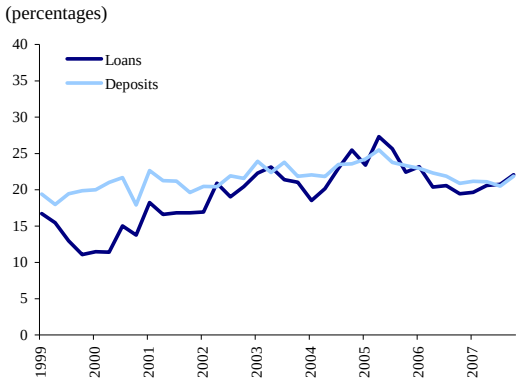
Sources: IMF and ECB calculations.

- Likewise, the euro visibly gained in importance as a reserve currency, with its share in central banks' holdings of foreign exchange reserves growing from about 24% at the start of EMU in 1999 to close to 32% by the first quarter of 2003 (all figures corrected for valuation effects; see Figure 3). After 2004, central bank holdings of foreign exchange reserves in the euro remained relatively stable at around 28%, potentially owing to the considerable reserve accumulation of several central banks, mainly in Asia, that were pursuing some strong form of exchange rate management against the US dollar. However, detailed data substantiating this assessment are lacking for the time being.[16]
- In cross-border loans and deposits of banks outside the euro area, the share of the euro followed a similar pattern, increasing until mid-2005 and receding slightly thereafter (see Figure 4).
- In terms of invoicing and settlement of imports and exports, the euro gained importance among those countries for which data are available,[17] increasing its share as the currency of denomination of their trade from around 40% in 2001 to more than 50% in 2003 (see Figure 5). In subsequent years, the euro's share stabilised at this level.

[16] The analysis of the currency composition of foreign exchange reserves is limited to those central banks which disclose this information. At the end of 2007, the currency composition was known for around two thirds of the central banks' holdings of foreign exchange reserves. Sovereign wealth funds, accounting for another quarter of global foreign reserves, do not generally disclose the currency composition of their assets. See, inter alia, Lim (2006).

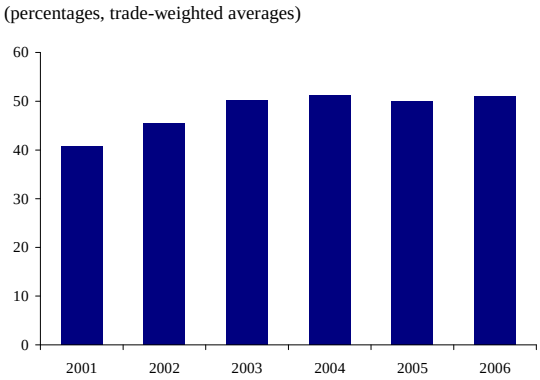
[17] Data on the invoicing or settlement currency of international trade flows are available for only 23 countries, together representing less than a fifth of world trade.

Figure 4: Share of the euro in the stock of international loans and deposits



Sources: BIS and ECB calculations.

Figure 5: Share of the euro in the settlement/invoicing of merchandise trade



Sources: national sources, IMF and ECB calculations.

Why did the euro very quickly become more widely used than its legacy currencies by non-residents, and why has the trend overall remained positive? Diversification considerations on the part of debt issuers and investors appear to have been a major driving force behind the observed developments. The establishment of the euro area – encompassing, from the start, the economies of 11 European countries, including five of the six biggest economies in Europe, alongside a progressive harmonisation of the framework governing the euro area's financial system – fundamentally contributed to enhancing the euro's attractiveness. Furthermore, the prospect of a growing economic weight of the euro area, on account of its enlargement, which started in 2000, added to this attraction, even though, in economic terms, the additional members did not contribute much. Hence, from the viewpoint of a geographically wider distribution of funding sources and investments, global portfolio optimisation strategies advocated a larger role for the euro.

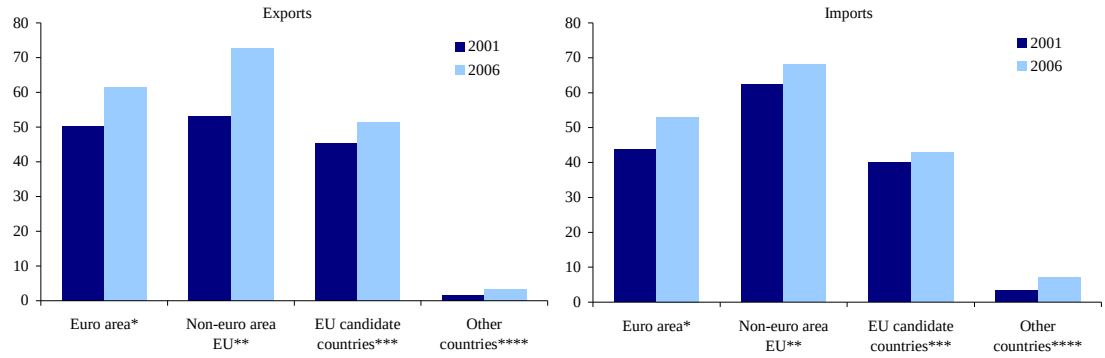
Stylised fact no 3: the euro has a predominantly regional role

While the euro's use outside the borders of the euro area has increased on a global scale, available evidence suggests that its rise is most prominent in countries neighbouring the euro area, especially those with strong institutional or political links to the European Union. Whereas this pattern is clearly discernible in the invoicing and settlement of trade flows, it is also observable in other domains, such as the market for international debt securities (see Figure 7) or in cross-border loans from banks located in the euro area to residents outside the euro area (see Figure 8).[18]

[18] See the special focus on the trends and determinants of asset substitution in central, eastern and southeastern Europe in ECB (2007).

Figure 6: Share of the euro in the settlement/invoicing of merchandise trade of selected country groups

(percentages, trade-weighted averages)

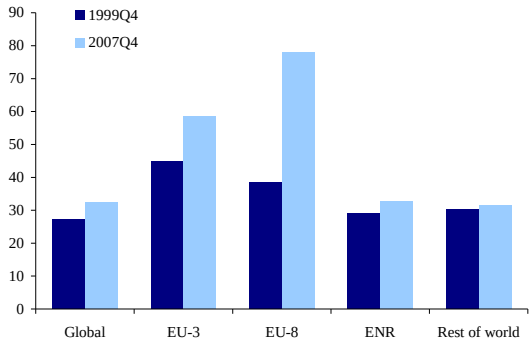


Sources: national sources, IMF and ECB calculations.
** Belgium, France, Germany, Greece, Luxembourg, Italy, Portugal, Spain; trade with countries outside the euro area.*
*** Bulgaria, Cyprus, Czech Republic, Estonia, Latvia, Lithuania, Romania, Slovak Republic.*
**** Croatia, FYR Macedonia, Turkey.*
***** Indonesia, Thailand, Ukraine.*

Moreover, the pattern appears to have become more pronounced over time, with countries located in the vicinity of the euro area expanding their use of the euro at a faster pace than those further away. As a matter of fact, a high degree of euroisation can be found in some countries of eastern Europe.

Figure 7: Share of the euro in the stock of international debt securities of selected country groups

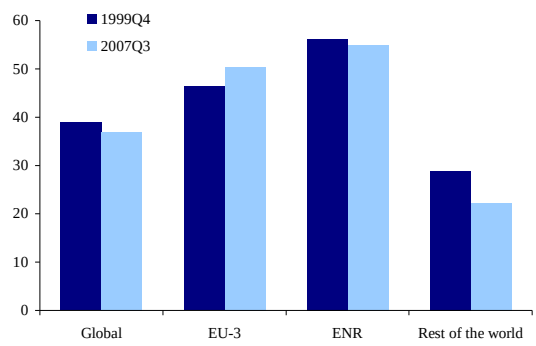
(percentages)



Sources: BIS and ECB calculations.
EU-3: UK, Denmark, Sweden.
EU-8: Other non-euro area EU Member States.
ENR: Other Europe, Africa, Middle East.

Figure 8: Share of the euro in cross-border loans of euro area banks to residents in selected country groups

(percentages)



Sources: BIS and ECB calculations.
EU-3: UK, Denmark, Sweden.
ENR: Other EU, other Europe, Africa, Middle East.

In the market for international bonds and notes, in particular, debt securities denominated in the euro's legacy currencies were already mainly concentrated in countries neighbouring the future euro area, with the share of instruments denominated in these currencies decreasing the further away the respective issuer was located from a euro area member state (see Figure 9). Ten years after the advent of the euro, this pattern appears to persist, even though the prominence of the euro in terms of total volumes of debt securities has risen considerably overall (see Figure 10). Again, however, this increase seems to be most notable in the geographical neighbourhood of the euro area.

Figure 9: International bonds denominated in euro legacy currencies as a share of total outstanding volumes

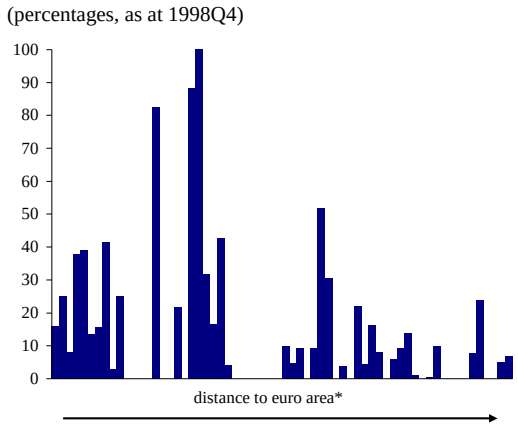
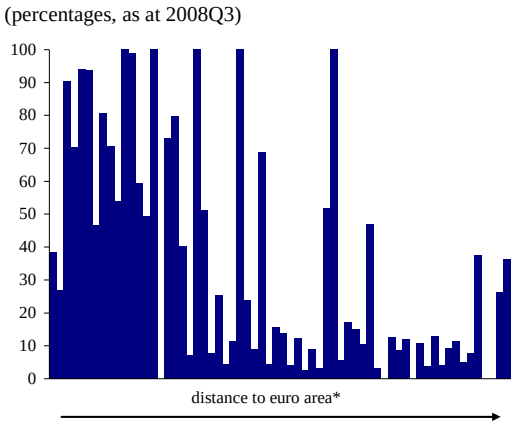


Figure 10: International bonds denominated in euros as a share of total outstanding volumes



* Geographical distance between Brussels and country capital with international bonds outstanding in the respective quarter.

Source: BIS and ECB calculations.

Finally, it is worth underlining that this regional concentration of the international use of the euro also extends to its public use. Indeed, most of the countries that have anchored their currency to the euro in a tight or semi-tight arrangement are located in neighbouring regions of the euro area. Similarly, these countries tend to use the euro as the preferred vehicle currency for defending the external value of their domestic currency.

IV. The impact of the global financial crisis on the international use of the euro

Comments have been voiced as to the longer-term implications for the global importance of the US economy in general, and that of the international role of the US dollar in particular, of the ongoing financial crisis which originated in the United States.[19] The impact of the crisis, and especially its intensification and broadening after September 2008, on the US dollar's and, by implication, also on the euro's international role has been impossible to assess so far. Even as regards the very short-term implications, a clear assessment cannot yet be made, as most recent systematic statistics capturing the international role of currencies cover, at best, the period until the third quarter of 2008.[20] Furthermore, the crisis is ongoing and its final repercussions on financial markets, on the shape of the global financial landscape and, as part of that, on the balance among the world's leading international currencies remain highly uncertain.

[19] On the eve of the 13–14 March 2009 meeting of the G20 Finance Ministers and Governors, the Finance Ministers of the BRIC countries issued a communiqué in which they called for a study of developments in the international monetary system, including the role of reserve currencies. This general call became more specifically targeted at the US dollar subsequently, especially on the part of the Chinese authorities.

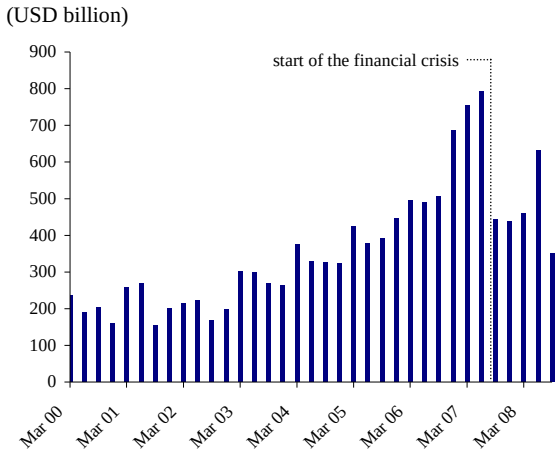
[20] For the international market of bank loans and deposits, for instance, comprehensive statistics with a currency breakdown are available only until end-Q2 2008 as of end-February 2009.

Nonetheless, evidence available from currently obtainable comprehensive data, complemented by narrower datasets on the issuance of bonds, notes and asset-backed securities (ABS) extending to the fourth quarter of 2008, indicates an overall significant decline in volumes of international securities issuance. As to the distribution of this issuance across different currencies, shifts have thus far, by and large, been fairly limited with regard to the market for international bonds and notes, with fluctuations for the euro share remaining inside the ranges observed over the past decade. Concerning asset-backed securities, however, an increasing share of euro-denominated paper since the onset of the financial crisis is noticeable on account of the collapsing supply of US dollar-denominated ABS issuance. By the end of 2008, the euro's share in this market segment had accordingly reached an unprecedented level. However, this apparent attractiveness of the euro should not be overrated in view of the presumed temporary nature of the crumbling issuance in US dollars. On the other hand, such a striking development does show that the usually displayed inertia with regard to the international use of currencies can evaporate in the presence of serious market disruptions of the scale currently witnessed for ABS.

More specifically, concerning the issuance of international bonds and notes,[21] volumes contracted to USD 351 billion by the third quarter of 2008, a level last observed in the fourth quarter of 2004, which compares with a peak in issuance of USD 791 billion in the second quarter of 2007 (see Figure 11). Across different currencies, the decline was most pronounced for the US dollar and sterling, where issuance in the third quarter of 2008 was more than two thirds lower than in the second quarter of 2007. The drop in issuance activity for other major currencies, albeit still significant, was markedly less, with the euro, yen and Swiss franc recording declines of 38%, 43% and 35%, respectively, over the same period. Consequently, these currencies' shares in total issuance have expanded since the onset of the financial crisis in the summer of 2007 (see Figure 12). Most notably, the share of the US dollar has fallen from 48.0% to 39.4% whereas the euro's share has increased from 30.1% to 33.6% since the second quarter of 2007. To put matters into perspective, however, it is worth pointing out that such a development is not unprecedented. In fact, a similar change in preferences from US dollar to euro issuance took place between late 2003 and early 2005, without any major financial market disruptions being present at the time.

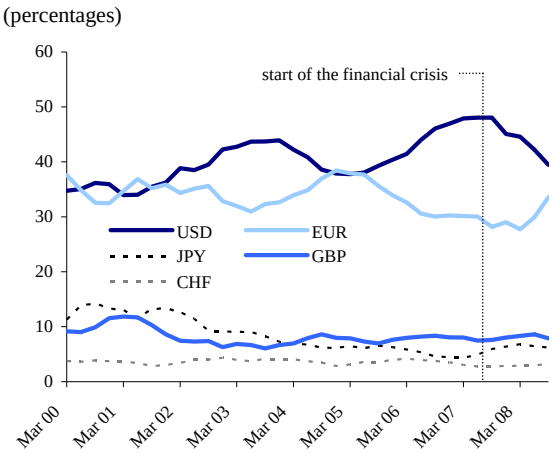
[21] International bonds and notes are defined as debt securities issued in currencies different from those of the currency area in which the issuer is residing.

Figure 11: Issuance of international bonds and notes



Source: BIS.

Figure 12: Issuance of international bonds and notes, currency shares[1]



Source: BIS and ECB calculations.

[1] In order to account for seasonality in issuance and valuation effects due to fluctuations in foreign exchange rates, these shares are reported as a four-quarter moving average and at September 2008 exchange rates.

Supplementary data[22] covering international debt securities issuance up to end-2008 indicate a further contraction in activity in the fourth quarter, with volumes declining to USD 126 billion, after USD 216 billion, USD 448 billion and USD 326 billion in the third, second and first quarter of 2008, respectively. The share of euro-denominated issuance continued its rising trend, amounting to 33.1% in the last quarter of 2008, based on a four-quarter moving average.[23]

Turning to international ABS,[24] parallels with the shifts observed in the market for international bonds and notes are evident, although fluctuations have been considerably more pronounced than those for bonds and notes, owing at least in part to the closeness of the US dollar-denominated ABS market to the US mortgage market, the epicentre of the financial crisis.[25] Issuance in this financial market segment collapsed after the summer of 2007, with the total in 2008 only a quarter of that witnessed in the course of 2007 (see Figure 13).

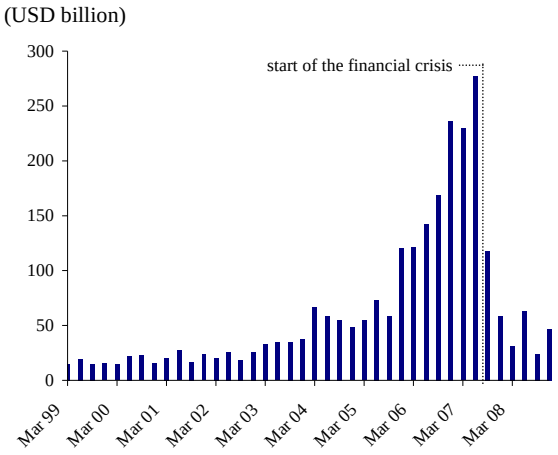
[22] Data are gathered from Thomson Financial and are less comprehensive than comparable information obtainable from the BIS but with daily availability on an issue-by-issue basis. In 2007, international bond issuance reported by Thomson Financial amounted to USD 1,400 billion while the BIS recorded USD 2,428 billion.

[23] This compares with shares of 30.9%, 28.4% and 27.6% in the preceding three quarters.

[24] Similar to international bonds and notes, an international asset-backed security is defined as an instrument issued in a currency different from that of the currency area in which the issuer is residing.

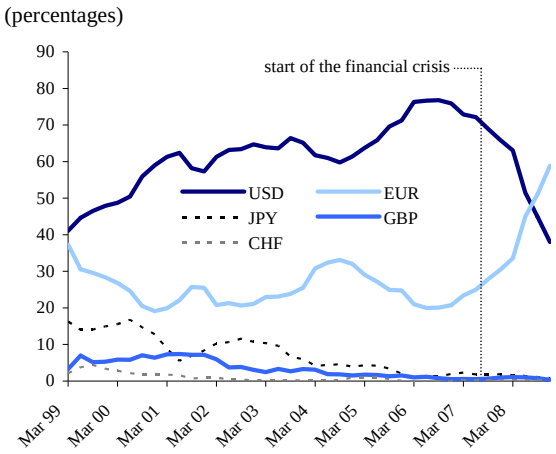
[25] Of the USD 2.5 trillion of international ABS issued between 1999 and 2008, around a third was backed by some kind of residential or commercial mortgage.

Figure 13: Issuance of international ABS



Source: Thomson Financial.

Figure 14: Issuance of international ABS: currency shares[1]



Source: Thomson Financial and ECB calculations.

[1] In order to account for seasonality in issuance and valuation effects due to fluctuations in foreign exchange rates, these shares are reported as a four-quarter moving average and at December 2008 exchange rates.

The retrenchment was again most notable in the US dollar, but also in sterling-denominated international ABS, where volumes in 2008 dropped by 88% and 91% compared with 2007. Activity in the euro has held up comparatively well to date, registering a decline of only 46%. Consequently, the share of the euro in the issuance of ABS expanded from 25% in the second quarter of 2007 to close to 59% at the end of 2008 (see Figure 14), mainly to the detriment of rapidly decreasing US dollar issuance.

Looking beyond the short-term developments influenced by the financial crisis, as observed until late 2008, and turning towards possible longer-term future evolutions, it is safe to assume that the global financial crisis is unlikely to be followed by a status quo ante. Instead, this crisis may well change a number of paradigms of global finance, which could, in turn, alter the global landscape of internationally used currencies and could, by implication, have a distinct bearing on the future relative role of both the US dollar and the euro in this landscape. At the same time, the financial crisis could provoke outcomes along various avenues that are not all necessarily negative for the US dollar. The following four possible evolutions are likely to be of relevance in this context:

- A first observation relates to a key feature of the ongoing financial crisis – namely, the severe difficulties experienced in the market for wholesale bank funding in major international currencies, especially since the last quarter of 2008. Until August 2008, mainly European banks had been confronted with funding problems in US dollars. Later, liquidity strains extended to other regions and other currencies, including the euro and Swiss franc. Central banks reacted by setting up mutual swap lines. The Federal Reserve established swap lines with the ECB and the Swiss National Bank, and they started to be used in December 2007. As the crisis became more global, the Federal Reserve expanded its swap network to other central banks, also reaching out to emerging market economies such as Brazil, Korea, Mexico and Singapore.[26] The

[26] See Ho and Michaud (2008) for an overview of inter-central bank swap lines.

arrangements for the provision of euro- or Swiss franc- denominated liquidity across central banks have a more regional focus. For instance, the ECB and the Swiss National Bank concluded a swap arrangement in October 2008 to ensure smooth funding in Swiss francs within the euro area. In the last quarter of 2008, the ECB entered into arrangements with the central banks of Denmark, Hungary and Poland.[27] Also in Asia, the augmented swap lines among central banks under the Chiang Mai Initiative follow a regional pattern. By contrast, the People's Bank of China seems to be engaged in a global effort to develop swap lines in renminbi with other central banks in the world. At some point in time, the wholesale interbank market will return to more normal conditions, obviating the need for an active use of the swap lines set up between various central banks. However, supply and demand conditions in this market may no longer be the same as before the crisis, for instance because non-US banks might want to be less short than before in their international US dollar funding. Obviously, this will have ramifications for some aspects of the international usage of the US dollar.

- Second, ambitious fiscal expansion programmes across different parts of the globe may trigger an important sectoral shift in international financing requirements. Specifically, large-scale issuance of new government paper could be accompanied by more subdued growth in private sector debt issuance as corporate and financial sectors in the major economies consolidate and repair their balance sheets. In this scenario, the supply of new international debt securities would be driven much more than before by the official sector. There is already evidence of such a trend in global securities markets during the fourth quarter of 2008, when most issuance of debt securities originated from the official sector. Whether this trend would reinforce the international role of the euro depends very much on the geographical composition of the new debt securities issuance. Since public sector deficits, at least in the current and next year, are likely to be more significant in the United States and the United Kingdom than in the euro area, this could systematically reduce the share of the euro in global bond markets. On the other hand, the larger public debt stocks in euro area countries, compared with those of the United States and the United Kingdom, point to a greater rollover need for the euro area public sector, which could compensate for the trend in new debt issuance.

- Third, aside from the sectoral (from private to public) and compositional effects (which region of the world will make a larger command on international savings), global financial markets may, over the next few years, also face structural shifts in the relative importance of financing instruments once the financial system settles into a new equilibrium. The aftermath of this crisis may well provoke a shift in the relative roles of bank lending versus direct market funding through bond or equity issuance. Shifts in the relative importance of bank lending, debt-based financing or equity financing could have an impact on the structure of markets in the major financial centres, and on the international use of the respective currencies. For example, the growth of bank lending may become stronger on account of a lesser recourse to the "originate-to-distribute" model of securitisation. On the other hand, new regulatory and supervisory arrangements, together with a need for balance sheet repair, may result in a more subdued rate of bank lending growth. To date, bank loans have been relatively more important in the euro area, where they constitute 115% of GDP (2007 figures), than in the United States, where they

[27] In the case of Denmark, that country being an ERM II member, the arrangement took the form of a swap, implying an exchange of euros against Danish kroner. In the cases of Hungary and Poland, the arrangements were in the form of a repurchase agreement and, therefore, did not involve an exchange of different currencies.

account for only 48% of GDP during the same period. Conversely, stock market capitalisation is far higher in the United States, at 95% of GDP as of 2007, than in the euro area, where it stands at around 74% of GDP.

- A fourth factor that is more specific to the euro relates to the prospects for further financial market integration in the euro area. Deep and liquid domestic financial markets are a key precondition for the development of an international currency. Unsurprisingly, progress towards deeper, more liquid and more integrated financial markets in the euro area has, over the past years, contributed to the gradual increase in the international role of the euro. A retrenchment towards national financial market solutions for the financial crisis in the European Union might trigger a slowdown of the past trend and could consequently reduce the rate of increase in the international attractiveness of the euro.[28] The ongoing coordination within the European Union of national action plans in financial and banking sectors does not, however, seem to point to risks of an overly great "home bias" in the euro area. Hence, there seems to be little danger of current developments jeopardising the considerable gains made in terms of financial market integration inside the euro area. In any case, the ECB is monitoring developments in this domain.[29]

The global financial crisis may change not only the landscape for the major international currencies, but also the conditions for smaller currencies to develop an international role. Until the onset of the crisis, there was some evidence of an increasing international role of emerging market currencies. One striking example was found in the foreign exchange market, where, according to the BIS Triennial Central Bank Survey, the share of emerging market currencies in foreign exchange transactions increased from 16.9% in 2001 to 19.8% in 2007.[30] The following countervailing forces of a steady progression of emerging market currencies deserve to be mentioned in this connection:

- The increasingly strong spillover of the global financial crisis to the real economy has weakened the macroeconomic and financial outlook of emerging market economies, and could therefore, at least temporarily, act as a brake on the relative attractiveness of their currencies. Since mid-2008, the exchange rates of many emerging market economies have depreciated considerably, or have come under significant depreciation pressure. Reserve accumulation has come to a halt, or even been reversed, in particular in cases where the authorities used the official reserves either to support the domestic currency or to provide foreign currency funding to the domestic banking sector. Moreover, there are signs of re-dollarisation or re-euroisation in some countries, including central, eastern and southeastern European economies where there is some evidence that households have switched part of their deposits out of local currency into the key international currencies. All these developments could potentially either delay the prospective progression of specific emerging market currencies in their role as fully fledged international currencies on a regional scale or, more generally, diminish the confidence of international currency users in emerging market currencies.
- At the same time, the crisis has heightened the risks of international banking and finance activities and, hence, also the use of foreign currencies more generally, which could cause economic agents in emerging market economies to make greater use of their domestic currencies, thereby complementing the phenomenon

[28] The euro area is part of the single financial market which encompasses all 27 EU member states.

[29] For the last few years, the ECB has published an annual report on euro area financial integration developments.

[30] See BIS (2007).

witnessed in industrialised countries of an intensifying "home bias". More specifically, in some countries, currency depreciations have triggered huge balance sheet effects, propelling the stock of those countries' external debt as a percentage of GDP, on account of large foreign exchange rate losses suffered by households and corporates that had indebted themselves in lower-yielding foreign currencies. Banking sectors in those emerging market economies may, as a consequence, start to face a deteriorating credit portfolio, to the extent that they have also extended domestic currency loans to such largely unhedged households and corporates, which are now facing larger debt burdens as a result of the domestic currency depreciation. The materialisation of these currency risks could encourage economic agents in emerging market economies overall to move towards a greater use of national currencies and to deepen local financial markets with domestic currency instruments, which would, in turn, pave the way for a greater international use of those currencies. Prior conditions for such a development would need to include the existence of a sound domestic macroeconomic policy framework with, notably, a commitment to a low-inflation environment, and a public sector that is predisposed to pursuing structural reforms aimed at developing the domestic financial sector.

V. Concluding remarks

The international use of currencies does not rank among the most exciting fields of international economics. The global use of currencies tends to be very slow-moving, driven by stable equilibria and characterised by considerable inertia. The experience with the euro so far during the first decade of its existence confirms this picture. First, the introduction of the euro in 1999 did not trigger any major shifts in the use of international currencies, and the euro basically inherited the international role of its predecessor currencies, which in some respects was surprising. Second, during its first 10 years, the euro's international role was not subject to any wide swings and recorded only gradual changes. Third, available evidence so far shows that, even during the height of the global financial turmoil in late 2008, the relative importance of the euro and the US dollar in international financial markets did not change much when viewed against the extreme volatility that characterised many of these markets.

Historical evidence suggests that changes in the use of international currencies tend to be associated with large structural breaks in societal, political and economic forces. At least at this point in time, the ongoing financial crisis does not compare to the type of serial shock events that precipitated the decline in the international currency status of, for instance, the Dutch guilder in the late 18th century or sterling in the early 20th century. In that sense, it does not presage any fundamental turnaround in the use of the US dollar that would play out to the advantage of the euro in its role as runner-up in the international currency environment. Still, at the margin, the current crisis may alter some of the preconditions for currency internationalisation. Changes in the relative roles of bank lending versus direct market funding could have an impact on the structure of markets in the major financial centres, and on the international use of the respective currencies. The ambitious fiscal expansion programmes across the globe may trigger important sectoral shifts in global financing requirements, with an increasing issuance of government paper denominated in specific currencies. The impact of the crisis on the pace of euro area financial market integration may also affect the growth path of the euro's international attractiveness.

Where the financial crisis seems to have more pervasive effects, at least in the short term, is on the international role of emerging market currencies. Over the past 10 years, many of these currencies have started to develop some use outside the borders of their respective jurisdictions, in tandem with the increasing trade and financial weight of the emerging market economies and their growing importance in the global economy. This steady progression in

the internationalisation of emerging market economies and their currencies is likely to be brought to a temporary halt on account of the negative fallout from the industrialised economies' economic downturn on both their domestic real and financial economies. At the same time, developments such as the growing financial losses on account of currency mismatches in combination with domestic currency depreciation or increasing "home bias" tendencies may sow the seeds for a more consolidated international use of these currencies.

All in all, it is definitely too soon to draw firm conclusions from the fallout of the ongoing financial crisis on the international use of currencies. For the euro, still in its infancy as a currency and, by implication, as an international currency when viewed in a historical perspective, as well as for other well established international currencies, the coming years will prove a challenging financial market environment and possibly a defining moment in their further international use.

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Internationalising the yen, 1984–2003: unfinished agenda or mission impossible?

Shinji Takagi[1]

1. Introduction

This paper reviews Japan's experience in its attempt to internationalise its currency, from 1984 to 2003. Although the efforts began reluctantly in 1984 under pressure from a foreign government, it soon became the stated policy of the Japanese government to "internationalise the yen". The government defined the internationalisation of the yen as "the expanding role of the yen in the international monetary system and the growing weight of the yen in current account transactions, capital account transactions, and foreign exchange reserves" (MoF (1999)). In an attempt to achieve this objective, efforts were made to ease restrictions on cross-border capital flows and to develop new yen-denominated markets and instruments. In 2003, however, the government's focus shifted to restoring Tokyo as a major international financial centre; more recently, the government has assumed an essentially laissez-faire attitude towards yen internationalisation.

Underlying the policy of promoting yen internationalisation was the view that the prevailing use of the yen in international transactions was not "commensurate with the share of the Japanese economy in the world and Japan's status as the world's largest net creditor nation" (MoF (1999)).[2] In pursuing the policy, moreover, the government stated that yen internationalisation would be beneficial to the country as it would: (i) reduce exchange rate risk for Japanese firms; (ii) strengthen the international competitiveness of Japanese financial institutions; and (iii) facilitate the development of Japanese markets as an international financial centre. Regional and international benefits were also claimed, such as: (i) greater use of the yen in Asia would lead to greater stability of exports from Asian countries, and contribute to their economic stability; and (ii) greater use of the yen internationally, supplementing the US dollar, would contribute to a more stable international monetary system as well as greater risk diversification for investors and central banks worldwide.

The Japanese government was not always in favour of promoting greater international use of the yen. Until 1964, Japan had restricted the international use of the yen, even for current international transactions (Takagi (1997)). The government had earlier, in 1960, permitted external current account convertibility (for non-residents), but full current account convertibility of the yen was only achieved when Japan accepted the obligations under Article VIII of the IMF Articles of Agreement in 1964. From then on, the government circumspectly eased remaining exchange and capital controls, including the 1972 abolishment of surrender requirements and the progressive liberalisation of foreign direct

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[2] The small share of yen invoicing in Japanese exports (less than 30% in 1980) was considered an anomaly in view of Grassman's Law, which states that contracts for trade in manufacturing goods tend to be denominated in exporters' currency (Grassman (1973)). Finland is said to be another well known industrial country which is an exception to the rule (Hartmann (1998)).

investment (FDI) under the code of the OECD. Even when inward FDI, except in certain designated sectors, was in principle liberalised in 1973, restrictions remained on outward FDI as well as on most external financial transactions.

Capital controls were not only a hindrance to promoting the international use of the yen but also an important tool of exchange rate policy well into the early 1980s (Takagi (2007)). The authorities, for example, eased outflow controls and tightened inflow controls when the yen was under appreciating pressure, while taking an opposite course of action when depreciating pressure was evident. Reflecting the policy of limiting the international use of the yen, the share of Japanese trade invoiced in the domestic currency remained small (eg 0.9% for exports and 0.3% for imports in 1970). The international use of the yen in financial transactions was virtually non-existent.

The rest of this paper discusses how the Japanese authorities began to promote greater international use of the yen in the mid-1980s and how successful subsequent government policy was in achieving the objective, in the following order. Section 2 reviews yen internationalisation efforts under the revised Foreign Exchange Law of 1980, with a special focus on the role played by the Yen/Dollar Working Group of the Japanese Ministry of Finance and the US Treasury. Section 3 discusses further efforts made under the new Foreign Exchange Law of 1998 (the so-called financial "big bang"), highlighting the initiatives to develop new yen-denominated markets and instruments. Section 4 makes an overall assessment of the Japanese efforts to internationalise the yen over the period 1984–2003. Finally, Section 5 presents concluding remarks.

2. Internationalisation under the revised Foreign Exchange Law

2.1 The revised Foreign Exchange Law

Until 1980, the Foreign Exchange and Foreign Trade Control Law (henceforth referred to as the Foreign Exchange Law) of 1949 regulated all external transactions, while the associated Foreign Investment Law of 1950 controlled, as transactions requiring approval, the acquisition of domestic equities by non-residents, transfers of technology, and financial inflows with maturities of more than one year. The purpose of the Foreign Exchange Law was to prohibit all capital flows except by explicit permission. The primary role of the Foreign Investment Law, under the foreign exchange control regime, was to guarantee the repatriation of principal or liquidation proceeds for investments approved under the law, thus promoting capital and technology imports deemed beneficial to the economy.

The subsequent transformation of the Japanese economy over a quarter of a century caused the Foreign Exchange Law and the associated Foreign Investment Law to become increasingly outdated. As foreign exchange restrictions were lifted over time and no binding restrictions remained on the amount that could be repatriated, the Foreign Investment Law became superfluous. Numerous revisions and ad hoc approvals made the application of the Foreign Exchange Law complicated and non-transparent. There emerged an obvious conflict between what the law said and what the government professed. The authorities thus announced, in 1978, that they intended to revise the laws, to change their legal basis from "prohibition in principle" to "permission in principle". In December 1980, a revised Foreign Exchange Law came into force, and the Foreign Investment Law was abolished.

While maintaining the principle that all external transactions could be conducted freely, the revised Foreign Exchange Law allowed the government to impose "minimum necessary controls" for balance of payments or exchange rate management purposes. The law classified capital transactions into four categories: (i) transactions that required approval; (ii) transactions that required prior notification but for which no government review was expected; (iii) transactions that required prior notification and for which government review

was expected; and (iv) transactions that required neither approval nor notification. The first category represented transactions deemed controlled ex ante, such as: foreign currency transactions between residents; deposit and trust contracts between residents and non-residents; and issuance of euroyen bonds by non-residents in foreign countries.

Most transactions fell under the second and third categories. First, the second category, for example, included inward FDI, which required prior notification to the Minister of Finance and the minister responsible. Under normal cases, no government review was to be expected, but the foreign investor could not make the investment for 30 days, during which time the government could intervene. In the event of a potential problem, the ministers could extend the probationary period from 30 days up to four months (five months if requested by the Foreign Exchange Council). If the investment was judged to have a harmful impact, the ministers could advise an alteration or even a termination. Second, the third category included such transactions as outward FDI, external lending, debt guarantee by residents for securities issues by non-residents in foreign countries, and acquisition by non-residents of real estate in Japan. For such transactions, in addition to the requirement of prior notification, review by the government was to be expected as a matter of course.

A critical role was played in the new control regime by authorised foreign exchange banks and designated securities companies. Transactions that required neither approval nor notification – the fourth category of transactions – essentially involved these institutions, namely cross-border transactions intermediated by authorised foreign exchange banks and portfolio investments intermediated by designated securities companies. In fact, many of the transactions in the first category were made subject to control precisely to protect the integrity of the authorised foreign exchange bank system. Otherwise, the overall system of inward and outward investments was quite liberal, subject of course to the condition that the transactions were made through a bank or a securities company, thus allowing the government to monitor or intervene if necessary. In addition, the Minister of Finance retained the power to limit foreign exchange banks' open positions in foreign exchange, specify requirements for their foreign exchange business, and prohibit them from paying interest on yen deposits held by non-residents.

2.2 The Yen/Dollar Committee

The beginning of Japan's official policy to internationalise the yen can be traced to the establishment of an ad hoc Yen/Dollar Working Group (henceforth the Yen/Dollar Committee) by the Japanese Ministry of Finance and the US Treasury in late 1983. The Committee was set up against the background of a large and widening trade imbalance between the two countries and the argument put forward by some observers that a weak yen was the principal contributing factor. The US position, based on what Frankel (1984) calls "questionable economic logic", held that the yen was undervalued because: (i) Japan was not attractive to international investors; and (ii) the currency was not attractive to international users. The Japanese authorities did not necessarily agree with such an assessment, but went along because the alternatives (such as further trade concessions) were far worse.

The US position was not only to internationalise the yen (in the hope of appreciating the currency over the medium term) but also to open Tokyo's capital markets – to allow US financial firms greater business opportunities in the expanding market. In substance, the Japanese position differed little. Around the same time, yen internationalisation and financial liberalisation were beginning to be placed on the policy agenda of the Japanese government. In October 1983, for example, the Japanese Minister of Finance proposed "the internationalisation of the yen and the liberalisation of financial and capital markets" as future policy objectives. The Japanese, however, preferred a much slower pace of reform than the Americans were willing to accept. The Committee became a forum in which the two sides were to discuss the content and pace of financial market reforms that Japan would undertake in order to open its markets and internationalise the yen.

Although the discussions proceeded at the technical level, the work had a strong political dimension. In the first place, the creation of the Committee was conceived in the context of the November 1983 visit of President Ronald Reagan to Japan, when endorsement was given to the work of the Committee at the highest political level. On more than one occasion, Prime Minister Nakasone is said to have intervened to push the reluctant Ministry of Finance officials to move forward in reaching agreement with their US counterparts (Takita (2006)). In the event, the Committee met six times from February to May, and released its report on 30 May 1984. The Japanese Ministry of Finance, however, did everything to avoid the appearance of being forced to open the Japanese capital markets. The Ministry concurrently prepared a report for domestic consumption on financial liberalisation and yen internationalisation. The report, entitled *The present status and outlook on financial liberalisation and yen internationalisation*, was released to the public at the same time as the Yen/Dollar Committee report.[3]

During the course of 1984, either concurrent with or subsequent to the work of the Committee, a number of market-opening and liberalisation measures were announced or implemented. Those measures included: the elimination of the so-called "real demand rule" (whereby a forward exchange contract needed to correspond to a bona fide transaction) in April; the relaxation of the conditions for euroyen issues by residents in April; the abolishment of regulations on the share of foreign borrowing that can be lent out to domestic entities by banks (so-called "yen conversion") in June; and the relaxation of the conditions for euroyen issues by non-residents in December. Because euroyen transactions were among the transactions that required approval under the revised Foreign Exchange Law, the focus of efforts over the subsequent years was naturally placed on this market segment. Additional measures agreed in, or proposed by, the Yen/Dollar Committee report would be implemented over a longer time horizon.[4]

2.3 The 1985 Foreign Exchange Council report

According to the MoF (1995, p 41), the government's stance on yen internationalisation was neutral during the deliberations of the Yen/Dollar Committee. The stance became explicitly positive only in the work of the Council on Foreign Exchange and Other Transactions (henceforth referred to as the Foreign Exchange Council), an advisory body to the Minister of Finance. The Council's report, issued in March 1985, put forth the idea that internationalisation of the yen should be actively promoted and suggested as necessary steps: (i) domestic financial liberalisation as a means of providing attractive yen instruments to non-residents; (ii) the liberalisation of euroyen transactions; and (iii) the internationalisation of Tokyo as a major financial centre.

As noted, the liberalisation of euroyen transactions received special emphasis in the Yen/Dollar Committee report (see Table 1 for details). Specifically, the measures that were suggested by the report and were implemented over the coming years included: (i) easing

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[3] Takita (2006) reviews the work of the Yen/Dollar Committee based on the memoirs and recollections of a number of Japanese officials who participated in the negotiations. He shows that there were two contentious issues. First, the Japanese side wanted to publish the domestic report before the Committee report, while the US side wanted the exact opposite. A compromise was reached to publish the two reports simultaneously. Second, debate within the Japanese Ministry of Finance concerned the sequencing of domestic financial liberalisation and yen internationalisation (ie liberalisation of euroyen transactions). The Ministry wanted to liberalise domestic markets before internationalising the currency, but yielded to US pressure by allowing both to proceed simultaneously.

[4] Those measures included: the liberalisation of yen-denominated external lending; the relaxation of the eligibility of non-resident firms to issue yen-denominated (samurai) bonds in Japan and their terms; and the development of a short-term government bond market.

issuing terms for euroyen bonds and abolishing withholding tax for non-residents (implemented in April 1985); (ii) permitting medium- to long-term euroyen lending for Japanese banks (April 1985 for non-residents; May 1989 for residents); and (iii) extending the maturity of euroyen certificates of deposit (CDs) from less than six months to one year (April 1986) and then to two years (April 1989). In addition, as a measure to internationalise the Tokyo markets, the Tokyo Stock Exchange extended membership to foreign securities companies in December 1985. In 1986, the revised Foreign Exchange Law was modified to allow the establishment of offshore accounts, leading to the launch of an offshore market in December.

Additional government reports were prepared over the subsequent years, which all repeated the same theme with different variations. For example, the June 1987 report stressed the need to improve the attractiveness of instruments traded in the short-term government debt markets. The outcome of those efforts went beyond the progressive liberalisation of euroyen transactions, as noted above. Different segments of domestic financial and capital markets were developed over time, including the establishment of a yen-denominated bankers' acceptance (BA) market (ostensibly to promote the use of the yen in current international transactions) and various markets for financial futures and options (Table 2). Efforts to internationalise the yen during this period were part of the overall efforts to liberalise domestic financial transactions and to develop domestic financial markets.

3. Internationalisation efforts under the big bang

3.1 The new Foreign Exchange Law

The prolonged economic stagnation of the 1990s weakened the shackles of vested interests, allowing Prime Minister Hashimoto to announce a comprehensive deregulation of Japan's financial markets in November 1996. With macroeconomic policies obviously not working, it was thought, structural reforms, including in the financial sector, would help revitalise the Japanese economy. There was also awareness that the status of the Tokyo market as an international financial centre (and the share of the yen in global foreign exchange trading) might actually be declining from the heyday of the 1980s (Table 3). Called the financial "big bang", a term borrowed from the 1980s deregulation of the London financial markets, the plan sought to make Japan's financial markets and institutions more competitive and efficient ("fair, free and global", to use the government's slogan) by eliminating existing barriers and impediments. Reform of the foreign exchange market was to become the front runner of the comprehensive financial system reform.

To map out the course of action, in January 1997 the Foreign Exchange Council submitted a report to the Minister of Finance, stating that the goal of the reform was to restore the status of Tokyo as one of the world's leading international financial centres by 2001 (MoF (1997)). To achieve this objective, the report proposed a comprehensive overhaul of the Foreign Exchange Law. The report, recognising that increasing international competition had caused a shift in recent years of financial transactions from domestic to international markets, proposed: (i) the complete liberalisation of cross-border financial transactions through the abolishment of prior approval or notification requirements; (ii) the abolishment of authorised foreign exchange banks and designated securities companies in order to increase the depth

of markets by allowing free entry and exit; and (iii) for outward FDI, the abolishment in principle of approval or notification requirements.[5]

The new Foreign Exchange and Foreign Trade Law came into force on 1 April 1998 (with the word "Control" removed from the title). As recommended by the 1997 Council report, prior approval or notification requirements were in principle abolished; instead, ex post facto reporting requirements were prescribed for transactions exceeding a stipulated amount for statistical purposes. Authorised foreign exchange banks, as well as designated securities companies, were abolished.[6] As a result, non-financial institutions were allowed to deal directly in foreign exchange transactions without the intermediation of authorised foreign exchange banks, and Japanese residents were allowed to open and maintain foreign currency accounts with financial institutions located in foreign countries. Japan became a financially open economy in the true sense of the word.

3.2 The Sub-Council on Yen Internationalisation

The subsequent five years (July 1998–January 2003) saw an intensification of government efforts to internationalise the yen. The work began in July 1998, when the Minister of Finance requested the Foreign Exchange Council to investigate and deliberate the internationalisation of the yen "from the perspective of the ongoing changes in the economic and financial conditions in Japan and abroad". Work was carried out by the Council's Sub-Council on Yen Internationalisation, whose interim report was issued in November (MoF (1998)). The full Council's final report, issued in April 1999, was almost entirely based on the November 1998 interim report, except for the measures taken immediately after the release of the interim report (MoF (1999)).

Though cross-border transactions had been fully liberalised under the new Foreign Exchange Law, the Sub-Council still recognised that there was room to improve the usability of the yen, especially in terms of providing risk-free, highly liquid financial products as well as a benchmark. From this standpoint, it stressed the importance of improving the market for government debt (bonds and bills). In particular, it noted that: (i) the markets for financing bills (FBs) and Treasury bills (TBs) lacked depth; (ii) the repo market in Japan was based on the borrowing and lending of bonds with cash collateral (whereas in the United States and Europe the repo market was based on the sale (purchase) of securities with a repurchase (resale) agreement; (iii) the long-term government bond market was not liquid across maturities and did not allow the efficient formation of a yield curve, thus limiting its usefulness as a risk hedging device; (iv) withholding tax on interest and capital gains affected cash flows and thus pricing, and discouraged non-residents from entering the market; and (v) the settlement system was not efficient.

To overcome these problems and thereby help improve the operation of the Japanese government debt markets, the Sub-Council made the following recommendations: (i) public auction of FBs; (ii) the abolishment of withholding tax on capital gains for TBs and FBs; (iii) the diversification of long-term government bond issues; (iv) the exemption of withholding tax on interest income for non-residents; and (v) the promotion of delivery versus payment (DVP) and real-time gross settlement (RTGS) to improve the settlement system. Decisions for some of these measures were implemented or announced even before the report of the

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[5] For inward FDI, prior notification requirements had been abolished in principle in 1992, with only ex post reporting requirements retained.

[6] At the same time, procedures were introduced whereby economic sanctions could be imposed in order to meet Japan's international obligations or for other political purposes. In 2001 and 2004, the law was further strengthened in this area, especially with regard to international terrorism and money laundering activities.

full Council was issued in April 1999, with the government making an announcement of "Measures to facilitate the internationalisation of the yen" in December 1998 (Table 4).

Early measures to improve the operation of the Japanese government debt markets were put in place in April 1999. With the commencement of a public auction for FBs, it was decided that their maturity would be 13 weeks; auctions were, in principle, to be held weekly; and FBs would no longer be underwritten by the Bank of Japan (BOJ) after the transitional period of about one year. Withholding tax on capital gains was exempted for foreign corporations (followed by the exemption of withholding tax on interest income for non-residents and foreign corporations in September 1999). Securities transactions and exchange taxes were abolished. Thirty-year Japanese government bonds (JGBs) and one-year TBs were introduced in order to diversify maturities.

The report of the full Foreign Exchange Council, issued in April 1999, outlined the tasks remaining in order to complete the development of the infrastructure needed to increase the convenience of using the yen. These measures included: (i) the development of a repo market (based on sales/purchases with repurchase/resale agreements); (ii) the introduction of five-year JGBs to serve as a benchmark for creating an efficient yield curve for government debt; (iii) the diversification of types of JGBs, including STRIPS[7] bonds; (iv) the introduction of RTGS to the BOJ-NET by the end of fiscal 2000 and the lengthening of operating hours; (v) the achievement of DVP for the settlement of CDs and commercial paper (CP) as early as possible (to enable full dematerialisation); and (vi) the promotion of yen invoicing in imports in order to increase the holding of yen by non-residents. The 1999 report further noted the need to provide yen funds to non-residents through capital transactions.

3.3 The Study Group on the Promotion of Yen Internationalisation

A Study Group on the Promotion of Yen Internationalisation was established in September 1999 to follow up on the recommendations of the April 1999 Foreign Exchange Council report. The Group, with some variations in membership, had three sessions over the subsequent four years (September 1999–June 2001, October 2001–June 2002 and September 2002–January 2003); it issued reports in June 2001 and June 2002 and the Chairman's summary in January 2003. The Study Group's orientation became increasingly pragmatic over time, as it began to focus on the specifics of how private sector firms chose which currency to use in international transactions.

The first report, issued in June 2001, stated that, despite some progress, the state of yen internationalisation had changed very little (MoF (2001)). It stated that the lack of progress was due to the lack of confidence in the Japanese economy and the limited need to use yen; the choice of currency was based on economic rationality. In order to further promote yen internationalisation, it would be necessary to restore Japan's economy and financial system, to further open the Japanese markets, and to establish the conditions necessary to improve the convenience of using the yen. The report still considered yen internationalisation as a long-term goal, as it was expected to contribute to greater exchange rate stability in Asia and hence to global monetary stability.

The second report, issued in June 2002, summarised the views expressed by Japanese private sector firms engaged in cross-border transactions and attempted to explain why yen internationalisation, as an outcome of market decisions, was difficult to achieve (IIMA (2002)). In terms of current transactions, the report noted that the choice of invoice currency was determined by various factors, including market power, matching of product exports and

[7] Separate Trading of Registered Interest and Principal Securities.

material imports, international price setting practice (as in energy products), preferences of importers and exporters, and so forth; there was greater yen invoicing for products for which Japan had strong market power. The report also made mention of Japanese corporate governance practice (under which minority shareholder rights were not protected), high bank fees for converting euroyen into yen, the lack of a sufficient number of risk investors in the Japanese markets, the need to adopt international accounting standards, and the need to allow documents to be produced in English.

Finally, the Chairman's summary, issued in January 2003, reiterated the possibility that the progress of yen internationalisation was being slowed by Japan's prolonged recession and the resulting loss of confidence in the Japanese economy (MoF (2003a)). The summary further recognised the role of inertia in the choice of key currency – conventions favoured the use of the US dollar. The summary only made broad recommendations, such as: (i) identifying and removing obstacles to yen invoicing in specific transactions; (ii) providing technical support to develop the legal infrastructure in Asia needed to securitise export receivables from Japan (hence allowing the establishment of a market for CP collateralised by export receivables); (iii) developing a procedure to provide yen credits to Asian exporters through technical assistance; (iv) further expanding the scope for exemption of withholding tax on capital gains for TBs and FBs held by non-residents; and (v) allowing the offshore market to trade derivatives and JGBs. The summary had an Asia focus, suggesting the need for greater regional financial cooperation, including the development of Asian bond markets. Overall, it had few concrete measures that would be achievable in the short run.

3.4 Internationalising Tokyo's capital markets

In 2003, the focus of the Japanese government shifted from internationalising the yen to internationalising the Japanese capital markets. A study group was set up within the Ministry of Finance, with academic and private sector participation, to consider the internationalisation of Japanese capital markets from March to July 2003. The Chairman's summary (MoF (2003b)), however, differed little from the similar summary of the preceding yen internationalisation group issued in January, indicating that most of the measures perceived necessary to further internationalise the capital markets had already been implemented in the context of internationalising the yen (Table 5). Even so, the summary noted that the status of the Japanese capital markets had declined as an international financial centre, in terms of bond issues by non-residents, new listing of foreign stocks, and offshore trading. The share of the yen in global foreign exchange trading had also declined (Table 3).

The summary noted the need to improve the intermediary role of Japanese markets in cross-border capital flows, and began to see the legal, accounting, settlement and tax systems as areas for improvement. For example, the summary noted that the administrative cost of using the samurai bond market (yen-denominated bonds issued in Japan by non-residents) was high, relative to the euroyen bond market, and suggested that the Tokyo offshore market be used to issue samurai bonds. It also argued for creating a market for yen-denominated CP collateralised by export receivables by abolishing withholding tax on capital gains on electronic samurai CP issued by foreign corporations. Other proposals included the simplification of reporting requirements to promote foreign investment in Japanese capital markets, the adoption of a book-entry system for the settlement of cross-border securities transactions to promote such transactions, and greater cooperation with Asian counterparts to promote the development of bond and foreign exchange markets, including the eventual establishment of a settlement system in foreign exchange and securities (an "Asia Clear") and commencement of cross trading among Asia's currencies.

4. Assessing the Japanese efforts to internationalise the yen

By the end of 2003, it was clear that any further attempt to internationalise the yen – or internationalise the Japanese capital markets for that matter – would be futile without a fundamental change in the economic might of Japan or major cooperation efforts among Asian countries to promote the role of the yen in the region. When the big bang of 1998 did not produce the kind of result previously hoped for, those involved in policymaking began to advance reasons why the international status of the yen remained where it was, including: (i) raw materials (for which dollar invoicing is the norm) constituted a large share of Japan's imports; (ii) the currencies of Asia tended to fluctuate more with the yen than with the US dollar, with virtually no cross trading; and (iii) there was little need for yen loans because most trade was not denominated in yen. But these are reasons about which Japan alone could do very little.[8] It is possible that this realisation, along with the personality changes within the Ministry of Finance and the splitting of responsibilities between the Ministry and the Financial Services Agency, led to the apparent loss of interest in further internationalisation efforts in 2003.

At the beginning of the new millennium, the international status of the yen essentially remained where it had started two decades earlier, before the internationalisation efforts began in earnest (Table 6). The share of yen invoicing in Japanese trade did moderately rise, however, especially on the import side. The share in import invoicing, which stood at a mere 2.4% in 1980, rose to over 20% in the early 2000s (for export invoicing, the rise was a few percentage points). But the share of the yen in international financial transactions, including cross-border bank positions, external bond offerings and bank loans, and official foreign exchange reserves, either remained the same or declined over time after an initial increase in the mid- to late 1980s. For example, the share of the yen in official foreign exchange reserves rose from 4.4% in 1980 to peak at 8.5% in 1991, before declining to 3.9% in 2003 (though the balance of yen reserves held up in absolute value). Likewise, the share in global cross-border bank positions rose sharply in the 1980s to exceed 10% in the late 1980s or early 1990s before declining.

Academic research suggests the importance of network effects – positive externalities that come from "additional users of a medium of exchange increasing the utility of its incumbent users" (Hartmann (1998)) – and hence the role of inertia and history in explaining the choice of international currency (see also Fukuda and Ono (2006)). In terms of current transactions, Sato (1999) shows that Japanese exporters display significant pricing to market (PTM) behaviour even in high-tech trade within Asia, which runs counter to promoting yen invoicing. In explaining the pattern of official reserve holdings, the most important factor seems to be exchange rate management practice (Papaioannou et al (2006)).

In financial transactions more generally, the choice of denomination currency depends on many other factors, including the level of interest rates and market expectations about prospective exchange rate movements. These considerations may explain why the yen was more widely used in the late 1980s and early 1990s than it is today, according to the standard metrics of Table 6. In the 2000s, however, the yen has been an active borrowing currency, as international investors have reportedly borrowed in yen to take advantage of its low interest rates and have invested the proceeds in higher-yield currencies (Hattori and Shin (2009)). When Iceland, Hungary and other European countries were hard hit by the global financial crisis of 2008, some of the household debt was said to be denominated in yen.[9] The

[8] Out of this came the argument that Japan should strengthen its links with Asian currencies, including through the adoption by Asian countries of a basket consisting of the dollar, the euro and the yen (MoF (1999)).

[9] See, for example, Forelle (2008) and Mayer (2009).

importance of the yen in such "carry trades" over the past decade, however, does not seem to show up in a standard metric of currency internationalisation.

To be sure, the yen has been an important international currency. Though its status does not match that of the US dollar or even the euro, it is no less important than the pound sterling or the Swiss franc. The yen is also a highly "internationalised" currency in the sense that more than half of its trading takes place offshore (BIS (2008)).[10] But this was not what the Japanese authorities had in mind when they embarked upon concerted efforts to "internationalise" the currency, namely to increase the use of the yen in international transactions to a scale perhaps more resembling the status of the Deutsche mark before the launch of the euro. Japan's concerted efforts may have enhanced the necessary conditions for making the yen a major international currency of that kind. But the lesson of 1984–2003 is that they were not sufficient to make it happen.

It is not warranted, however, to draw the conclusion that Japan's currency internationalisation efforts were a total failure. Rather, the proper conclusion to draw from the Japanese experience is that dictating the world's choice of key currency cannot be the feasible objective of any country's domestic public policy. Even so, the sustained yen internationalisation efforts from the mid-1980s were successful in another way: they freed the Japanese economy from regulatory barriers inhibiting the free movement of capital. The result was an accelerated financial integration of Japan with the rest of the industrial world, with the balance of cross-border assets and liabilities more than doubling over the period as a percentage of GDP (Figure 1). Japan is now a highly financially open economy, with cross-border assets and liabilities well exceeding the size of GDP. Yen internationalisation served as a banner under which parties of conflicting interests were brought together to create a highly deregulated financial system.

5. Conclusion

This paper has reviewed the experience of Japan in its attempt to internationalise its currency, from 1984 to 2003. Although the process began reluctantly under pressure from a foreign government, it soon became the stated policy of the Japanese government to "internationalise the yen", namely to expand the role of the yen in the international monetary system as well as in international transactions. The efforts essentially involved measures to ease restrictions on cross-border capital flows and to develop new yen-denominated markets and instruments.

By 2003, however, it was clear that any further attempt to internationalise the yen would be futile without a fundamental change in the economic might of Japan or major cooperation efforts among Asian countries to promote the role of the yen in the region. At the end of the internationalisation efforts, the international status of the yen essentially remained where it had started two decades earlier, for reasons about which Japan alone could do very little. This realisation, coupled with the personality and organisational changes within the Ministry of Finance, led to the apparent loss of interest in making further internationalisation efforts.

The sustained yen internationalisation efforts of 1994–2003 were successful in a different way: they freed the Japanese economy from regulatory barriers inhibiting the free movement of capital. The result was an accelerated financial integration of Japan with the rest of the industrial world, with the balance of cross-border assets and liabilities more than doubling

[10] In April 2007, the share of offshore trading in global foreign exchange trading for the yen was 67%, the same as for the Swiss franc but lower than for the US dollar (79%) and the euro (77%).

over the period. By then, Japan had become a highly financially open economy, with cross-border assets and liabilities well exceeding the size of GDP. In retrospect, yen internationalisation was a banner under which parties of various vested interests were brought together to benefit the whole society.

Table 1

Selected measures to liberalise euroyen transactions, 1984–98

Month of action	Measures taken
June 1984	Short-term euroyen loans to residents liberalised
December 1984	Foreign securities companies allowed to become lead manager of euroyen bonds
April 1985	Withholding tax on resident euroyen bonds abolished
April 1986	Issuing guidelines relaxed for non-resident euroyen bonds (henceforth eligibility based solely on credit rating)
July 1987	Issuing guidelines relaxed for resident euroyen bonds (credit rating introduced)
November 1987	Non-resident euroyen CP authorised
May 1989	Medium- to long-term euroyen loans to residents liberalised
June 1989	Further relaxation of eligibility criteria for non-resident euroyen bonds (credit rating no longer required)
June 1989	Non-resident euroyen bonds with maturities of less than four months authorised
July 1993	Eligibility criteria for non-resident euroyen bonds abolished
January 1994	Minimum repatriation period for sovereign euroyen bonds abolished
April 1995	Procedure for approval and notification made flexible for non-resident euroyen bonds
August 1995	Minimum repatriation period abolished for non-resident euroyen bonds
April 1996	Minimum repatriation period for resident euroyen bonds shortened from 90 to 40 days
April 1996	Issuing rules for euroyen CP abolished (virtual elimination of all restrictions on bringing proceeds back into the domestic market)
April 1998	Minimum repatriation period for resident euroyen bonds abolished

Source: Japanese Ministry of Finance.

Table 2

Selected measures to liberalise cross-border financial transactions and to develop domestic market segments, 1984–96[1]

Month of action	Measures taken
April 1984	Real demand rule abolished for forward exchange transactions
June 1984	Regulation on the share of foreign borrowing that can be lent out to domestic entities by banks (the so-called yen conversion) abolished
June 1985	Yen-denominated bankers' acceptance (BA) market established
December 1986	Tokyo offshore market established
June 1987	Trading in stock futures commenced (Osaka)
September 1988	Trading in Nikkei-225 futures commenced (Osaka)
April 1989	Tokyo Financial Futures Exchange established
June 1989	Trading in Nikkei-225 options commenced (Osaka)
July 1989	Liberalisation of resident foreign currency bank deposits abroad (no approval required for individuals holding less than the equivalent of JPY 5 million)
July 1990	Liberalisation of resident foreign currency bank deposits abroad (no approval required for either corporations or individuals holding less than the equivalent of JPY 30 million for portfolio investment purposes)
January 1994	Eligibility criteria relaxed for resident foreign bonds and samurai bonds
July 1994	Eligibility criteria relaxed for yen-denominated foreign bonds
April 1995	Procedure for approval and notification made flexible for non-resident domestic bonds
January 1996	Eligibility criteria abolished for non-resident domestic bonds

[1] Excluding measures related to euroyen transactions.

Source: Japanese Ministry of Finance.

Table 3

Share of the yen and of the Tokyo market in global foreign exchange trading

As percentages of the global total

	1989	1992	1995	1998	2001	2004
Share of yen	13.5	11.7	12.1	10.1	11.4	10.1
Share of Tokyo mkt	15.5	11.2	10.2	6.9	9.1	8.2

Source: BIS, *Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity*, issues, 1990–2005.

Table 4

Selected measures taken following the April 1999 report

Recommendations in the report	Measures taken and when
Public auction of FBs	Completed, April 1999
Abolish withholding tax related to public bonds	(i) Abolished for certain types of FBs and TBs issued after 1 April 1999; (ii) foreign corporations exempted from withholding tax, 1 April 1999; (iii) non-residents and foreign corporations exempted from withholding tax for certain JGBs whose interest is calculated after 1 September 1999; (iv) the scope for tax exemption expanded for non-residents and foreign corporations, effective April 2001
Develop a repo market	Repo transactions based on repurchase and resale agreements introduced in April 2001
Introduce five-year interest bearing JGBs	Introduced in February 2000
Introduce gross settlement into, and expand operating hours for, the BOJ-NET	Completed, 4 January 2001
Establish a DVP settlement system for CP	The enabling law was enacted in June 2001 (with the system coming into operation in March 2003)

Source: Japanese Ministry of Finance.

Table 5

Selected measures to internationalise the Japanese capital markets, 1999–2003

Month of action	Measures taken
March 1999	Securities transactions tax abolished
April 1999	Withholding tax abolished for capital gains on TBs and FBs
September 1999	Income tax exempted for non-residents on interest on certain JGBs
October 1999	Commissions fully deregulated in the equity market
January 2001	RTGS introduced to current accounts at the Bank of Japan and the settlement of JGBs
April 2001	Repo transactions (on the resale and repurchase basis) introduced
May 2001	DVP settlement introduced to listed stocks in Tokyo and Osaka
2003	Requirement of concurrent domestic exchange listing abolished for samurai bonds
2003	Non-residents allowed to participate in the private placement market for samurai bonds restricted to eligible institutional investors
January 2003	Book-entry system for settlement in securities
January 2003	STRIPS national bonds introduced
July 2003	Securities and insurance companies allowed to participate in the offshore market

Source: Japanese Ministry of Finance.

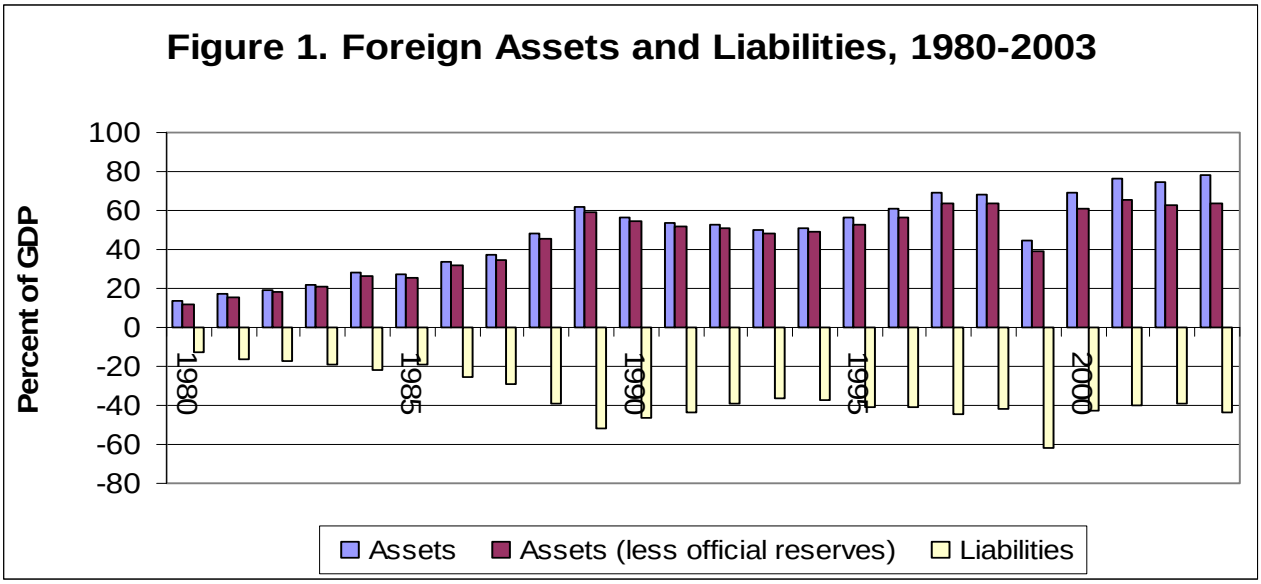
Table 6

International status of the yen, 1980–2003

Percentage shares of totals

Year	Japanese trade invoicing[1]		Global cross-border bank positions[2]		Global external bond offerings[3]	Global external bank loans[3]	Global official forex reserves[4]
	Exports	Imports	Assets	Liabilities			
1980	29.4	2.4	2.1	1.8	4.9	--	4.4
1981	31.2	--	2.4	1.9	6.6	--	4.2
1982	32.2	--	2.4	1.9	5.6	3.7	4.7
1983	34.5	--	2.3	1.8	5.5	7.4	5.0
1984	33.7	--	3.1	2.2	7.1	16.3	5.8
1985	36.0	7.0	5.1	4.2	9.1	18.5	8.0
1986	36.5	9.7	7.2	5.9	10.4	16.1	7.9
1987	33.4	10.6	11.3	9.5	13.7	10.8	7.0
1988	34.3	13.3	12.3	10.1	8.4	5.6	7.1
1989	34.7	14.1	11.2	8.9	8.3	4.7	7.3
1990	37.5	14.5	10.6	8.0	13.5	1.7	8.0
1991	39.4	15.6	11.3	7.4	12.6	1.1	8.5
1992	40.1	17.0	9.8	5.9	11.2	1.4	7.5
1993	39.9	20.9	10.1	6.3	9.6	0.7	7.6
1994	39.7	19.2	11.0	6.7	13.3	0.2	7.8
1995	36.0	22.7	11.3	7.3	12.6	0.2	6.8
1996	35.2	20.6	10.2	6.9	8.6	0.2	6.0
1997	35.8	22.6	10.1	6.9	4.5	0.2	5.3
1998	36.0	21.8	10.3	7.5	--	--	6.2
1999	--	--	9.2	7.2	--	--	6.4
2000	36.1	23.5	8.4	6.6	--	--	6.1
2001	35.6	23.6	6.2	4.9	--	--	5.0
2002	36.7	25.5	5.6	4.8	--	--	4.4
2003	39.3	25.3	4.9	3.9	--	--	3.9

Sources: [1] Japanese Ministry of Finance. [2] *BIS Quarterly Review*, March 2009, Table 5A (year-end values). [3] OECD, *Financial Market Trends,* various issues, 1981–98. [4] IMF, *Annual Report*, respective issues.



Source: Japanese Ministry of Finance.

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The euro and the yen as anchor currencies: before and during the financial crisis – comments on Moss's paper "The euro: internationalised at birth" and Takagi's paper "Internationalising the yen, 1984–2003: unfinished agenda or mission impossible?"

Robert N McCauley

1. Introduction

Frank Moss and Shinji Takagi have both made important contributions to the understanding of the role played by the second and third currencies in the G3 triumvirate, respectively. Moss describes a euro that gained traction after its creation ten years ago, but may have lost some ground in the turmoil of 2008 in the capital markets. Takagi describes an official promotion of the yen that seems to have lost impetus in the face of disappointing results.

Both papers miss shifts in the tectonic plates of international finance. Policy and market trading align currencies into zones of shared movement. By not considering the role of the euro and the yen as anchor currencies in their respective zones in the lead-up to the current crisis, each paper understates the extent of its currency's internationalisation. In particular, the edge of the euro zone had moved east and even some American currencies co-moved to a significant extent with the euro against the US dollar. At the same time, several East Asian currencies co-moved with the yen against the dollar while commodity and high-yield currencies moved inversely with the yen against the dollar. For instance, from mid-2006 to mid-2008, the Brazilian real rose against the dollar in periods when the yen fell against the dollar and fell against the dollar when the yen rose against the dollar. Such regularities point to so-called carry trades in which investors in effect financed long positions in high-yielding currencies with yen. The upshot of these observations is that the dollar was serving as anchor for a shrinking share of the world economy as the world approached its most serious financial crisis in two generations.

This waxing role for the euro and, in a very different manner, for the yen before the crisis contrasts with the dollar's sharp rise at the height of the crisis. Even as the dollar zone shrank, the dollar still stood head and shoulders above the other major currencies as the medium of exchange against the other currencies. In the financial crisis, this dimension of the dollar's role became very important. This importance is key to an understanding of both the sharp recovery of the exchange value of dollar in the second half of 2008 and the scramble for dollars in the foreign exchange swap market (McCauley and McGuire (2009)). This might be called the "revenge of the medium of exchange".

2. The gains of the euro and yen as anchor currencies

Both the euro and the yen were gaining as currency anchors in the years before the financial crisis. A dozen years ago, before the euro's inception, its predecessor currencies' zone of currency co-movement extended to western and central Europe and West Africa (McCauley (1997, 2000)). In the years before the Asian financial crisis in 1997–98, only the Singapore dollar showed any regular co-movement with the yen, sharing something like 20% of yen/dollar fluctuations.

Since the euro's inception, two sets of developments have enlarged the de facto euro zone. The first is policy-based and well understood, but the second is market-based and ill understood. As a result of stated policy, the line between the euro and the dollar has moved eastward in Europe (Figure 1).[1] It is not simply that Greece, Slovenia and Slovakia joined the euro area in 2001, 2007 and 2009, respectively. Currencies like the Czech koruna and the Polish zloty were managed in relation to a basket containing the dollar as well as the Deutsche mark in the mid- to late 1990s but now float with lowest variance against the euro (Genberg et al (2005)). As noted by the ECB (2008, p 45), the de facto boundary between the euro and the dollar shifted east in a major way with the Russian authorities' decision to focus on a 50/50 euro-dollar basket in their intervention policy and public communication.

Less clear but no less significant are shifts in Asia, especially the behaviour of the Chinese currency (Figure 2). What is certain is that by the first half of 2008, both the People's Bank of China (2008) and the State Administration of Foreign Exchange (2008) were comfortable in citing the behaviour of the renminbi's effective exchange rate. Hu (2010b) makes the case for paying attention to the renminbi's trade-weighted basket rather than the bilateral dollar exchange rate. Frankel (2009) detects an echo of the euro/dollar exchange rate in monthly changes of the renminbi against the dollar. Ma and McCauley (2010) go further and find a tendency of the renminbi's effective exchange rate to revert to an appreciating mean in the period mid-2006 to mid-2008, albeit slowly (Figure 3). This would imply a weight on the euro and the yen of one sixth each (Figure 4).

All of these are cases of announced or imputed policy. In addition, markets can trade currencies in a more or less consistent manner with respect to the major currencies. Until the crisis, sterling tended to trade in an intermediate fashion between the euro and the dollar, and as a result its effective exchange rate remained quite stable. Oddly enough, the Australian and New Zealand dollars began in the late 1990s to trade more in line with the euro than with the US dollar (despite their continuing to be labelled "dollar bloc" currencies). This development remains a bit puzzling even though it has persisted now for ten years.

The euro also began to resonate in the trading of western hemisphere currencies. The Brazilian real, the Canadian dollar and the Chilean peso all tended from mid-2006 to mid-2008 to strengthen against the dollar when the euro did. To some extent, this may reflect the joint tendency of these currencies to move with commodity prices and these prices to move with the euro/dollar rate. To a lesser extent, the Mexican peso showed the same tendency then. In sum, by mid-2008, the euro zone defined in policy and market terms had moved east, while in market terms it had moved west as well.

The yen zone in East Asia has extended beyond Singapore to Taiwan, China. On the interpretation of Ma and McCauley, the yen also played a role parallel to the euro in the management of the renminbi between mid-2006 and mid-2008.

A striking observation in this sample period is the yen's *negative* association with the dollar exchange rates of commodity and high-yield currencies. It is worth emphasising that this relationship had not shown up in an immediately preceding sample period (McCauley (2008, p 33)). Much effort has been expended in measuring the quantity of so-called yen carry trades, that is, investment in higher-yielding currencies funded in some sense with Japanese yen (Hattori and Shin (2007); Galati et al (2007)). But much of the yen funding may be presumed to have taken the form of unmeasured forward sales of yen against the dollar,

[1] Figure 1 displays results of regressions of the weekly percentage change in a given currency's dollar exchange rate on the weekly percentage change in the euro/dollar rate, the yen/dollar rate and the weekly change in equity market volatility as measured by the VIX. See Haldane and Hall (1991), Kawai (2002) and Cairns et al (2007).

leaving no measurable quantitative trace for much of such positioning.[2] Movements in foreign exchange rates from mid-2006 to mid-2008, however, showed the regular association of yen weakness against the dollar, on the one hand, and the strength against the dollar of the Korean won,[3] the Indonesian rupiah, the Antipodian dollars, the Turkish lira, the South African rand, the pound, the Brazilian real and the Canadian dollar, on the other. The interpretation that the yen was a funding currency is supported by the positive co-movement between the yen/dollar and the Swiss franc/dollar, another so-called funding currency.

The suggestion of these findings is that the yen became internationalised in this period in a negative fashion. That is, the yen figured in international finance more as a currency of denomination of liabilities than as a currency of denomination of assets. The fears expressed by Sakakibara and Kondoh (1984) of an asymmetric internationalisation of the yen came true – though with the opposite sign on the asymmetry to the one they anticipated. Because the yen liabilities that fund carry trade positions would be mostly secured through the unobserved over-the-counter forward and option markets, they would not register in conventional measures of the yen's internationalisation, as cited by Takagi (or the ECB (2008)). Nevertheless, regularities in the trading of high-yield and commodity currencies leave the strong suggestion of wide international use of the yen.

3. 2008 financial crisis – revenge of the medium of exchange?

Even if the dollar was losing ground as a currency anchor in the run-up to the crisis, it remained predominant as a means of exchange. In the foreign exchange market, more than half of the currencies included in the central bank survey in April 2007 traded against the dollar in over 90% of all transactions by value (Table 1). Only in the Baltic countries and in Bulgaria and Romania did the euro serve as the means of exchange to a greater extent than the dollar. In Asia, the dollar was used almost to the exclusion of the euro or the yen.

Indeed, if one were a bank trying to *swap* foreign currency into the local currency, as opposed to trying to make a spot purchase of the local currency, the dollar was even more the key currency. The Danish krone, the Czech koruna, the Hungarian forint, the Norwegian krone, the Polish zloty, the Slovak koruna and the Swedish krona all traded more against the euro than against the dollar in the spot market (Table 2). However, the swap market traded more against the dollar. Thus, outside a narrow fringe of currencies in central Europe, the action in the foreign exchange swap market remains swapping the local currency against the dollar (BIS (2010, pp 57–8)).

This lingering dominance of the dollar in the foreign exchange swap market normally makes little difference. The efforts of the ministries of finance of Japan and Korea to encourage direct trading in the yen/won rate, which amounted to $0.7 billion per day equivalent in April 2007 (Tsuyuguchi and Wooldridge (2007, p 9)), appeared quixotic to many observers. However, in the financial crisis of 2008, strains spread from the dollar interbank market to the euro/dollar foreign exchange swap markets and from there to foreign exchange swap markets more generally. The lingering dominance of the dollar as the vehicle currency in

[2] Such speculative forward positions could form a substantial, albeit variable, counterpart to the estimated gap between Japanese banks' balance sheet assets in dollars and their balance sheet liabilities in dollars. McGuire and von Peter (2009, p 52) estimate this gap at over $600 billion. Most of the gap between balance sheet assets in other foreign currencies and liabilities in other foreign currencies, some $1.2 trillion, would also be hedged with yen/dollar forwards.

[3] Several years ago, the Korean won shared much of the yen's movement against the dollar, but this positive relationship turned negative in the period from mid-2006 to mid-2008.

currency swaps turned a crisis of dollar funding for non-US banks into a crisis of cross-currency funding almost everywhere.

The global dollar shortage (McGuire and von Peter (2009)) arose from an asymmetry in the internationalisation of the dollar and the euro. US banks have relatively small international balance sheets, and as a result do not need to fund a very large sum of assets in European currencies (Figure 5). By contrast, European banks have large international operations, including dollar claims. These comprise not only claims on the United States but also those on third countries, including Asian countries like Korea, where European banks have a larger share of international claims than their US and Japanese competitors. Without commensurate retail deposit bases in dollars, European banks depended on US dollar money market funds, the interbank market and placements of central bank reserves to fund their dollar books.

When interbank markets began to dry up in the summer of 2007 as evidence accumulated of bank credit losses, European banks turned to the euro/dollar swap market to secure dollars (Baba et al (2008)). In effect, they used the swap market to replace uncollateralised borrowing with collateralised borrowing. But the offer of euros for dollars by European banks found no matching offer of dollars for euros by US banks. As a result, the cost of swapping euros for dollar escalated (Baba and Packer (2008)).

The failure of Lehman Brothers led to a run by investors on certain US dollar money market funds that had placed half their funds with European banks (Baba et al (2009)). This intensified the strains in dollar interbank and swap markets. European banks responded with operations in third markets that tended to generalise the strains in the swap market. In Tokyo, for instance, they borrowed yen and swapped them for dollars. In Korea, they recalled loans to local banks and repatriated dollars that they had swapped for won.

Under these circumstances, it mattered a great deal that the European banks needed dollars (rather than euros or yen) to fund their won operations in Korea. Had not the dollar served as the means of exchange, the pressure to withdraw from Korea would have been far weaker. A dollar that had been on the back foot going into the crisis drew strength from its predominance as a go-between in international currency trading. This was the revenge of the means of payment.

Amid the US dollar's sudden salience as a means of exchange, it regained importance, for a time at least, as a currency anchor. In particular, as the crisis approached its climax in the summer of 2008, the Chinese authorities suspended their experiment in managing the renminbi against a basket in favour of a reversion to a familiar peg against the US dollar. The dollar zone accordingly temporarily grew larger even as the US dollar experienced its sharpest appreciation of the post-1973 era. In mid-2010, the Chinese authorities resumed the managed float "with reference to a basket of currencies" (Hu (2010a)).

4. Conclusions

In their different ways, the roles of both the euro and yen in world currency trading were growing before the crisis. The boundary between the euro and dollar had moved east, and commodity currencies, including those in the western hemisphere, tended to co-move with the euro against the dollar to varying extents. For its part, the yen had gained influence not only on the positive but also on the negative side, supporting the notion of a pervasive carry trade funded in some sense with yen.

In general, the role of the dollar as a medium of exchange may not be decisive, but in a crisis it may make a difference whether the domestic currency trades against the dollar or the euro. Would the global financial crisis have differed in Asia and the Pacific if domestic currencies

had traded in the foreign exchange market against the euro or the yen instead of against the dollar?

In sum, the euro has gained a higher profile as a key currency than the evidence reviewed by Frank Moss would suggest. The currencies of neither oil exporters nor big exporters of manufactures no longer seem inevitably linked to the dollar to the exclusion of other major currencies. Meanwhile the yen, although its international role defies precise measurement, has left unmistakable footprints in the markets for high-yielding and commodity currencies. The yen may not have become internationalised in the manner desired or anticipated by Japanese officials, as reviewed by Shinji Takagi, but it can figure importantly in leveraged international finance.

Tables

Table 1

The dollar and the euro as media of exchange in the foreign exchange market

In millions of US dollars and per cent, April 2007

Currency	Turnover vs USD	Turnover vs EUR	Total	US dollar %	Euro %	*Memo: euro beta*
Argentine peso	1,052	31	1,087	97	3	*.11**
Australian dollar	76,674	2,166	84,576	91	3	*1.11****
Bahraini dinar	66	1	75	89	1	*.05****
Brazilian real	4,300	59	4,374	98	1	*.89****
Bulgarian lev	29	201	231	13	87	*1.00****
Canadian dollar	38,364	834	40,440	95	2	*.76****
Chilean peso	3,714	28	3,745	99	1	*.49****
Chinese renminbi	9,030	6	9,056	100	0	*.10****
Colombian peso	1,731	10	1,744	99	1	*1.09****
Czech koruna	2,406	1,070	3,567	67	30	*.98****
Danish krone	13,020	9,335	23,804	55	39	*.88****
Estonian kroon	22	749	773	3	97	*1.00****
Hong Kong dollar	72,521	…	73,407	99	…	*.01*
Hungarian forint	2,906	775	3,806	76	20	*1.50****
Indian rupee	16,029	160	16,418	98	1	*.28****
Indonesian rupiah	1,689	51	1,829	92	3	*.37****
Israeli shekel	4,127	…	4,353	95	…	*.42****
Japanese yen	138,846	14,077	169,574	82	8	*na*
Korean won	26,099	351	27,105	96	1	*.33****
Latvian lats	72	186	262	28	71	*.98****
Lithuanian litas	35	538	585	6	92	*1.00****
Malaysian ringgit	2,651	31	2,719	97	1	*.37****
Mexican peso	14,827	230	15,068	98	2	*.29****
New Zealand dollar	6,654	92	7,255	92	1	*1.18****
Norwegian krone	15,831	2,696	19,617	81	14	*1.28****
Peruvian sol	737	0	737	100	0	*.20****
Polish zloty	4,589	1,831	6,510	71	28	*1.31****
Romanian leu	100	1,654	1,768	6	94	*1.32****
Russian rouble	23,598	1,125	24,740	95	5	*.56****
Saudi riyal	1,712	12	1,772	97	1	*.01*
Singapore dollar	22,937	315	24,249	95	1	*.39****
Slovak koruna	3,098	314	3,422	91	9	*1.22****
South African rand	10,063	274	10,589	95	3	*1.15****
Swedish krona	12,988	8,720	23,677	55	37	*1.25****
Swiss franc	52,676	13,680	69,299	76	20	*.82****
Taiwan dollar	6,234	108	6,551	95	2	*.20****
Thai baht	4,413	82	4,739	93	2	*.45****
Turkish lira	1,804	266	2,074	87	13	*.92****
Pound sterling	240,301	39,388	297,292	81	13	*.79****

Note: Covers trading in domestic market only. Spot, outright forward and foreign exchange swap transactions. Adjusted for local inter-dealer double-counting (ie "net-gross" basis).

Source: Triennial Survey, Table E-7.

Table 2

The dollar and the euro in the European foreign exchange markets

In millions of US dollars, April 2007

Currency	Total turnover vs USD	Total turnover vs EUR	Spot turnover vs USD	Spot turnover vs EUR	Swap turnover vs USD	Swap turnover vs EUR
Bulgarian lev	29	201	22	185	6	11
Czech koruna	2,406	1,070	239	554	1,648	299
Danish krone	13,020	9,335	1,054	2,509	10,849	5,794
Estonian kroon	22	749	3	72	18	677
Hungarian forint	2,906	775	55	587	2,827	113
Latvian lats	72	186	7	92	64	88
Lithuanian litas	35	538	19	398	15	136
Norwegian krone	15,831	2,696	259	1,220	14,850	1,174
Polish zloty	4,589	1,831	189	1,287	4,274	239
Romanian leu	100	1,654	77	735	12	830
Russian rouble	23,598	1,125	17,149	837	5,482	246
Slovak koruna	3,098	314	3	212	3,094	94
Swedish krona	12,988	8,720	451	2,270	12,233	5,835
Swiss franc	52,676	13,680	29,104	8,476	21,022	3,891
Turkish lira	1,804	266	430	55	915	185
Pound sterling	240,301	39,388	51,054	16,082	173,323	17,241

Note: Covers trading in domestic market only. Totals include spot, outright forward and foreign exchange swap transactions. Adjusted for local inter-dealer double-counting (ie “net-gross” basis).

Source: Triennial Survey, Tables E-5 and E-6.

Figures

Figure 1

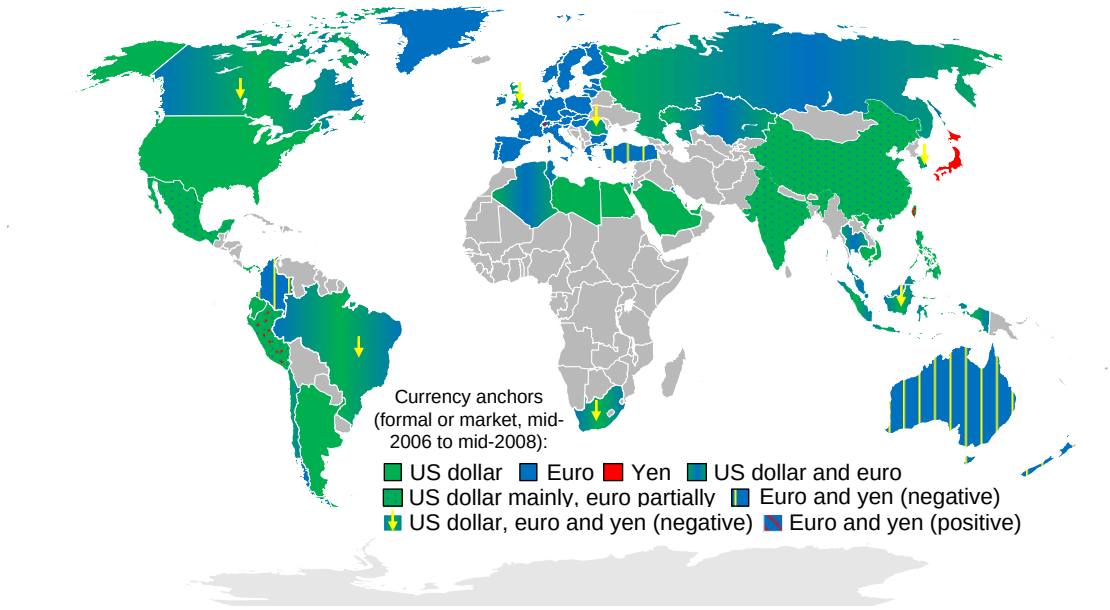


Figure 2

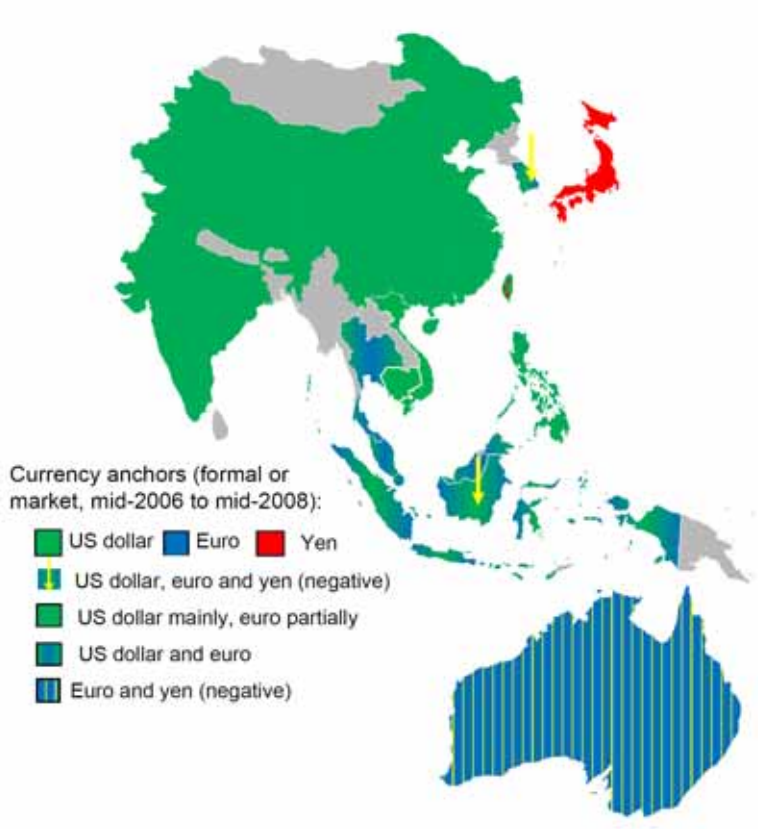
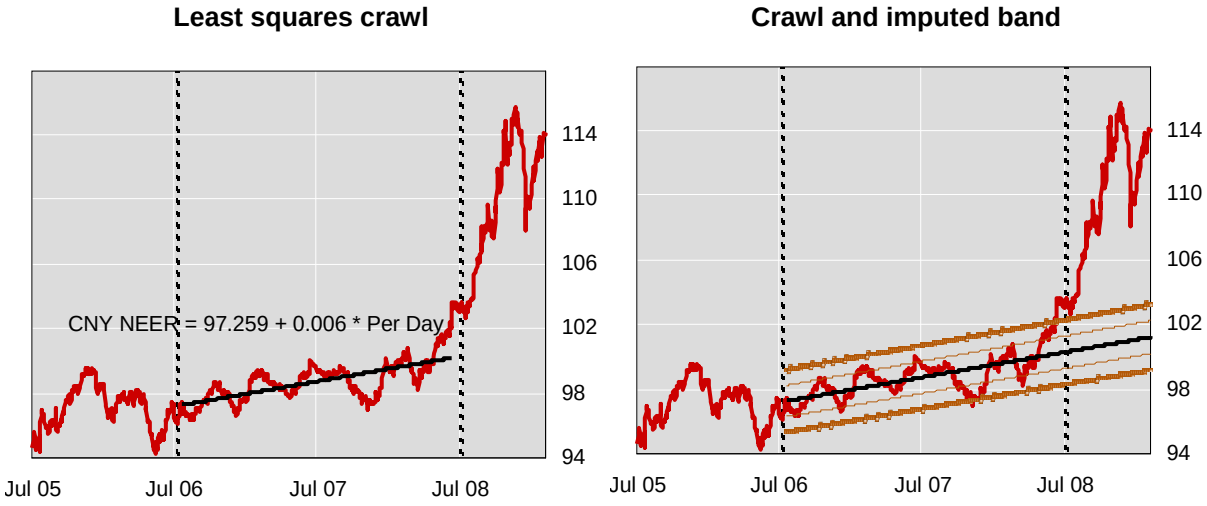


Figure 3

Nominal effective exchange rate for the Chinese renminbi

Index, 2000 = 100

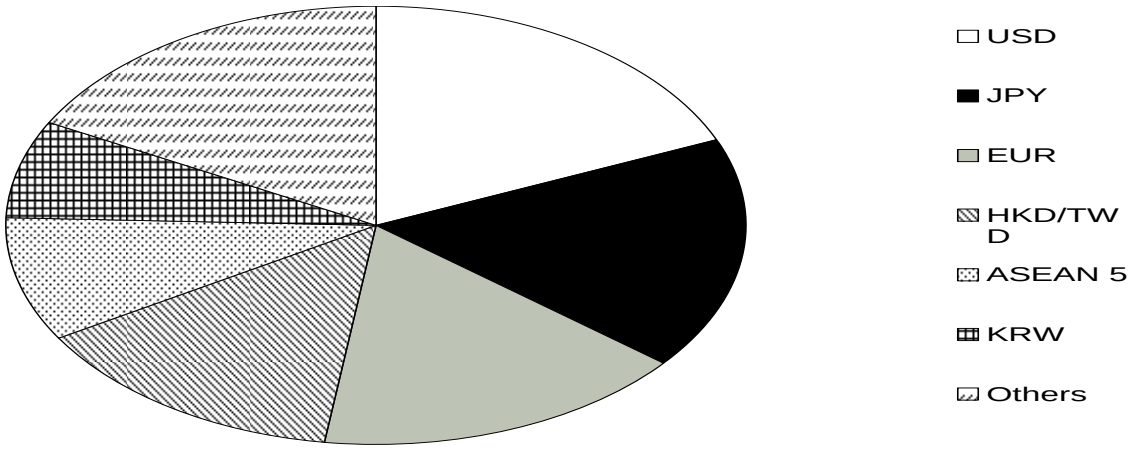


Note: Daily data. The trend line is estimated over the two-year period from mid-2006 to mid-2008, regressing the BIS NEER against the trading time trend. The thick dotted lines represent ±2% of the trend line, and the thin dotted lines ±1% of the trend line.

Sources: BIS; Ma and McCauley (2010).

Figure 4

Weights of the BIS effective exchange rate for the renminbi



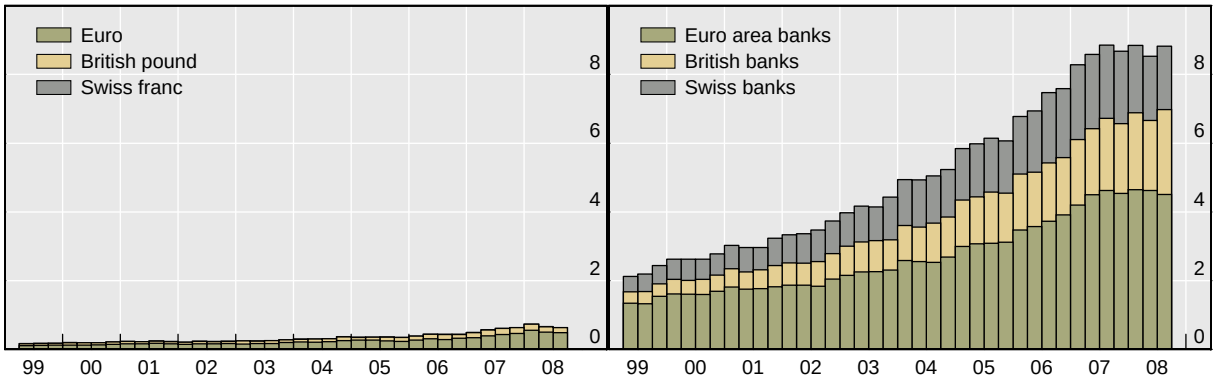
Source: BIS.

Figure 5

The transatlantic asymmetry in international banking

In trillions of US dollars

US banks' assets in European currencies **European banks' assets in US dollars**



Source: BIS.

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Internationalisation of the renminbi

Haihong Gao and Yongding Yu[1]

Introduction

Over the past three decades, China's fast economic growth and its increasing economic integration with the world have led to a significant increase in its influence in the world economy. During the Asian financial crisis of 1997–98, China was praised as a responsible country, because of its efforts in maintaining the stability of the renminbi while many other countries in the region had devaluated their currencies. It was the first time that China itself, as well its Asian neighbours, started realising China's emerging influence. Like it or not, China is no longer an outsider in global financial events. This is not only because China is now the world's third largest economy and second largest trading nation, but also because it holds the largest amount of foreign reserves in the world.

Since the Asian financial crisis, China has been faced with three major tasks with regard to its international financial policies. The first is the reform of the global financial architecture. The second is the promotion of regional financial cooperation, which consists of two components: the creation of a regional financial architecture and the coordination of regional exchange rate arrangements. The last is internationalisation of the renminbi. It is fair to say that, over the past 10 years or so, the most discussed issue in China has been regional financial cooperation. Although the result is still highly unsatisfactory, together with its East Asian neighbours China has achieved some tangible results, built on the basis of the Chiang Mai Initiative (CMI).

The current crisis has exposed the vulnerability of China's financial position under the existing international monetary system, which is characterised by the domination of the US dollar as the international reserve currency. Because a national currency is used as the international reserve currency, US policy aimed at crisis management has created strong externality to the rest of the world. Because China holds some USD 1 trillion in US dollar assets in its foreign exchange reserves, it has become an easy prey of American domestic policies. The value of China's foreign exchange reserves is in danger of being significantly eroded as a result of the debasing of the US dollar, which is, in turn, a result of the US government's crisis management.

Chinese economists are scrambling for solutions. The reform of the international financial architecture is certainly helpful. However, it is more easily said than done. While China will champion the cause of international monetary and financial architecture reform, it knows well that it is very difficult to make any fundamental difference to the global monetary and financial architecture. Even if it can make a difference, the change may come too late to help China reduce the possible losses caused by the debasing of the US dollar. Regional financial cooperation is also helpful. But, as we have all seen over the past 10 years, progress in that respect has been painfully slow. Each participating country in the CMI has its own agenda. It is perhaps a bit unfair, but certainly not far from the truth, that East Asian countries prefer to be drawn together by the financial tsunami rather than give an inch to other member countries. Who cares whether China makes huge capital losses on its foreign exchange reserves?

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The internationalisation of the renminbi was not previously an eye-catching issue. This is partially because it is closely related to the issue of renminbi convertibility, which in turn was assumed to be conditional on the full liberalisation of the capital account. Nobody in China seriously thinks that China should, and will, fully liberalise its capital account in the foreseeable future, and hence the discussion of renminbi liberalisation has taken a back seat in the policy debate.

However, interest in internationalisation of the renminbi has recently been increasing, partially due to the frustration over the slow progress of regional financial cooperation and the helplessness in achieving any meaningful progress in the reform of the international financial architecture. Could internationalisation of the renminbi be treated as part of the solution for the problems that China is currently facing? Compared with the creation of a regional financial architecture and the reform of the international financial architecture, internationalisation of the renminbi seems to be an easier solution to safeguard China's financial interests as well as its stability. Compared with the reform of the international financial architecture and the promotion of regional financial cooperation, there seems to be more room in internationalisation of the renminbi for China to act positively rather than passively. Of course, internationalisation of the renminbi is a multidimensional issue, which should be discussed in a broad perspective, and we will do so in this paper.

This paper is organised as follows. Section 1 provides a conceptual discussion of the meaning of internationalisation of the renminbi and a description of the degree to which the renminbi has been used internationally and/or regionally. Section 2 analyses the objectives and rationales for internationalising the renminbi. The conditions for internationalisation of the renminbi are investigated in Section 3 and, lastly, we present our conclusions.

1. What is meant by internationalisation of the renminbi?

There is a relatively well established framework to define what is meant by the internationalisation of a currency. According to Kenen (2009), an international currency is one that is used and held beyond the borders of the issuing country, not merely for transactions with that country's residents but also, and importantly, for transactions between non-residents. Theoretical discussions on currency internationalisation usually start with the functions that are performed by an international currency. Kenen (1983) gave early thoughts on the roles of international currencies. Chinn and Frankel (2005) developed a list of the international functions of an international currency, which is summarised in Table 1. According to them, an international currency has to be capable of playing the roles of a store of value, a medium of exchange and a unit of account for both residents and non-residents. More specifically, it can be used for private purposes as a currency substitution, for invoicing and denominating investments and for trade and financial transactions. It can also be used for public purposes as official reserves, a vehicle currency for foreign exchange intervention and an anchor currency for pegging. This analytical framework can be used as a theoretical guideline for understanding internationalisation of the renminbi.

Table 1

Roles of an international currency

Function of money	Governments	Private actors
Store of value	International reserves	Currency substitution (private dollarisation)
		Investment
Medium of exchange	Vehicle currency for foreign exchange intervention	Invoicing trade and financial transactions
Unit of account	Anchor for pegging local currency	Denominating trade and financial transactions

Source: Chinn and Frankel (2005), originally from Kenen (1983).

1.1 The extent to which the renminbi has been used internationally/regionally

Table 2 provides a brief summary of current international/regional use of the renminbi, in line with the general roles of an international currency indicated in Table 1. It shows that the renminbi is a currency playing neither the role of a store of value nor that of an anchor for public purposes. The renminbi has started to be used by non-residents as a vehicle, and an invoicing, currency in trade and financial settlement, but only in a very limited way.

Table 2

Summary of international/regional use of the renminbi

Function of CNY	Public purpose	Private purpose
Store of value	International reserves	Currency substitution and investment
	None	CNY deposits in Hong Kong
		CNY loans in Hong Kong
		CNY bonds in Hong Kong by policy and commercial banks
		CNY government bonds under ABF2
		CNY equities via QFII
Medium of exchange	Vehicle currency	Invoicing currency
	BSAs under the CMI	Trade settlement in CNY
	Bilateral swap arrangements between central banks	
Unit of account	Anchor for pegging	Denominating currency
	None	

Source: Chinn and Frankel (2005) and authors' calculation.

Use of the renminbi for public purposes

China has been actively involved in the establishment of the regional financial architecture since the outbreak of the financial crisis in 1997–98. It has become an important fund supplier of the bilateral swap arrangements (BSAs) under the CMI framework and is engaged in multilateral policy dialogue and designing economic surveillance mechanisms in the region. As a result of China's involvement in the building-up of the regional financial architecture, the renminbi was allowed to be used as a vehicle currency via the BSAs and as a denominating currency in the issuance of Asian bonds. As Table 3 shows, by the end of July 2007, China had signed USD 23.5 billion worth of BSAs with Japan, Korea, Thailand, Malaysia, the Philippines and Indonesia, respectively. However, the major currency used in the arrangements is still the US dollar. It is obvious that for the success of ongoing multilateralisation of the CMI and the enlarged common reserve fund enacted in February 2009, the use of the dollar needs to be limited while encouraging the use of member countries' currencies.

Table 3

Bilateral swap arrangements: China and other ASEAN+3 countries (as of July 2007)

BSA	One/Two-way	Currency	Total size, USD bn	Status
China-Thailand	One	USD/THB	2	Concluded: Dec 2001 Expired: Dec 2004
China-Japan	Two	CNY/JPY JPY/CNY	6	Concluded: Mar 2002
China-Korea	Two	RMB/KRW KRW/CNY	8	Concluded: Jun 2002
China-Malaysia	One	USD/MYR	1.5	Concluded: Oct 2002
China-Philippines	One	CNY/PHP	2	Concluded: Aug 2003 Amended: Apr 2007
China-Indonesia	One	USD/IDR	4	Concluded: Dec 2003 Amended: Oct 2006

Source: Bank of Japan.

In December 2008, apart from BSAs within the CMI framework, China signed its first BSA with Korea. This was a serious move that China had made in response to the widespread financial crisis. By doing so, China was effectively sharing the burden with Japan and international financial organisations in order to help out the Asian countries in trouble. Two more contracts with Hong Kong and Malaysia were signed between central banks at the beginning of 2009. On 11 March 2009, the People's Bank of China (PBoC) concluded another bilateral contract with the central bank of Belarus. It is worth noting that, in all the new bilateral swap contracts, the renminbi, rather than the US dollar, is used in the swaps. It is commonly known that central banks use the foreign currency from swap agreements to prop up their domestic currency by providing the foreign currency to domestic financial institutions so that central banks can use the foreign currency to directly intervene in exchange markets and enable domestic financial institutions to stay away from the foreign exchange market so as to avoid driving down the exchange rate of the domestic currency. Therefore, the use of the renminbi in swap agreements means that it has been used as a vehicle currency by non-residents.

Use of the renminbi for private purposes

Renminbi-denominated bonds

Another regional financial arrangement is the development of the regional bond market. The second stage of the Asian Bond Fund (ABF2) was launched in June 2005, with seed money of up to USD 2 billion. While the bonds issued by sovereign and quasi-sovereign issuers under ABF1 were only dollar-denominated, ABF2 allows local currencies to denominate bond issuances in the eight markets, including China, Hong Kong, Indonesia, Korea, Malaysia, the Philippines, Singapore and Thailand (EMEAP (2006)). The renminbi is correspondingly used in the China fund issuance.

Apart from the regional arrangement, China has taken several steps since 2007 to allow the renminbi to be used as a medium of exchange. For instance, in June 2007 the PBoC and the National Development and Reform Commission announced their decision to allow policy and commercial banks to issue renminbi-denominated bonds in Hong Kong. The first renminbi-denominated bond launch outside the Chinese mainland was the issuance of CNY 5 billion in such bonds in Hong Kong by China Development Bank. Since then, several mainland commercial banks have also issued renminbi bonds in Hong Kong, including the Export-Import Bank of China, which issued CNY 2 billion, the Bank of China, whose issue amounted to CNY 3 billion, and the Bank of Communications, which announced its decision to offer renminbi-denominated bonds, with an aggregate principal amount not exceeding CNY 5 billion, to institutional and retail investors in Hong Kong.

Given the limited size and immaturity of the Chinese domestic bond market, the Chinese mainland decided to take advantage of the well developed market in Hong Kong for two reasons. The first is that the issuance of renminbi bonds in Hong Kong helps to build up the infrastructure of the mainland bond market and creates progress in transaction rules. The second is that the issuance of renminbi bonds in Hong Kong is seen as the first step towards promoting the involvement of the renminbi in the bond market outside the Chinese mainland. It helps to quicken the pace of the opening of the Chinese mainland's capital market as well as capital account convertibility.

Renminbi in trade settlement and bank loans

One important role played by the renminbi is in trade settlement and bank loan business. With the rapid development of China's foreign trade, the magnitude of renminbi circulation in China's neighbouring countries has increased significantly. For instance, in Mongolia, 60% of the cash in local circulation is in renminbi. In some major foreign exchange markets in Ulan Bator, the capital of Mongolia, the renminbi and the US dollar are the two foreign currencies with the largest transaction amount. In Korea, the renminbi is accepted in shops and restaurants. In Vietnam, the renminbi can be exchanged via unofficial banking, whose legitimacy has recently been acknowledged by the Vietnamese government. In Hong Kong, the renminbi has become the second largest exchange currency after the Hong Kong dollar. In Taiwan, the renminbi will be legitimately exchanged after a new agreement signed by mainland and Taiwan banks. In Laos and Myanmar, the renminbi is popular in some provinces bordering China. Cambodia and Nepal have announced that the official circulation of the renminbi in their markets is welcome.

However, it is difficult to estimate precisely the magnitude of renminbi circulation in neighbouring economies because the renminbi is not fully convertible. The renminbi cannot be deposited in the banking systems of most neighbouring economies, which has resulted in the unavailability of data. There have been varying estimates regarding the extent of renminbi circulation overseas. For statistical reasons, a better way of estimating renminbi circulation is by focusing on the renminbi business in the banking system in Hong Kong.

The renminbi business in the Hong Kong banking system was launched jointly by mainland China and Hong Kong SAR on 25 February 2004, when 32 licensed banks started offering renminbi deposit-taking, currency exchange and remittance services. Figure 1 shows the

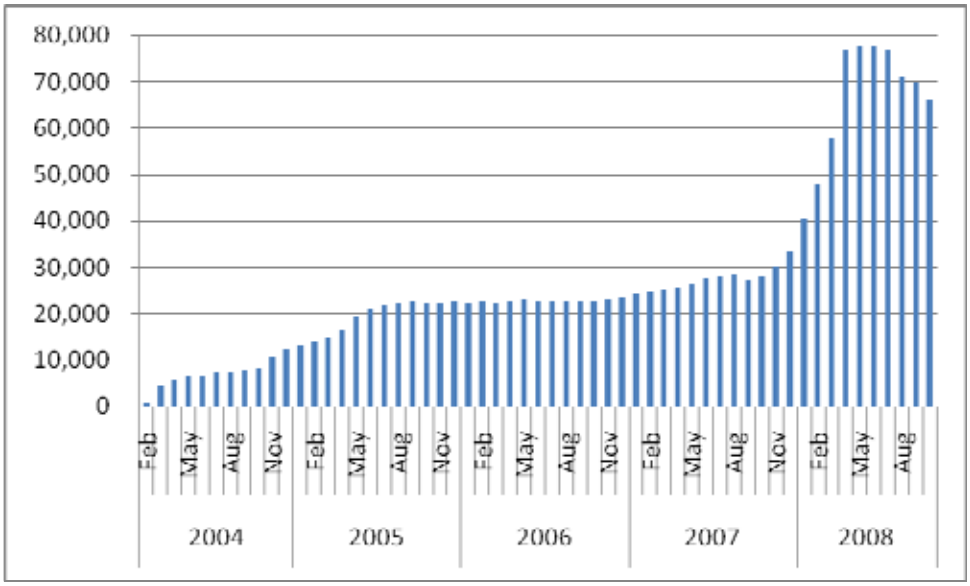
change in the size of renminbi business in Hong Kong between February 2004 and October 2008. The figure shows that renminbi deposits started at only CNY 895 million in February 2004, rising sharply to a peak of CNY 77,675 million in May 2008 due to strong expectations of renminbi appreciation. In particular, a rapid increase in demand for the renminbi in the first quarter of 2008 led to the growth of renminbi deposits in Hong Kong by a further 33% year on year, resulting in the May peak, which was three times higher than the year-earlier level. However, a new policy implemented by the China Foreign Exchange Trade System as from 5 May 2008 to levy a higher fee on the trading of renminbi by the Clearing Bank raised the transaction costs of converting Hong Kong dollars into renminbi. As a result, renminbi business started declining in June 2008.

There was concern over international currency speculators taking positions on the renminbi because of the free convertibility between other currencies and the Hong Kong dollar. However, statistics show that, at the end of February 2008, the CNY 47.8 billion in deposits represented only 0.8% of total deposits, equivalent to 1.7% of total Hong Kong dollar deposits in Hong Kong. Given such a small base, it is expected that currency speculation against the renminbi is unlikely to have a severe impact on Hong Kong's banking sectors.

Another problem is that using data available from the banking system is likely to underestimate the actual size of renminbi circulation. In fact, there is a significant gap between the flows through bank business and other means of exchange of the renminbi in Hong Kong. The difficulty in quantifying renminbi circulation outside China leads to the problem of estimating the potential impact on China's monetary policy. The major concern is the risk of sudden flows of renminbi funds between mainland China and Hong Kong SAR, which, to a large degree, is determined by the change in the renminbi appreciation premium and the change in the Chinese central bank's monetary policy.

Figure 1

Renminbi deposits (CNY millions, February 2004–October 2008)



Source: Hong Kong Monetary Authority.

Table 4 provides a detailed summary of international/regional use of the renminbi.

Table 4

International/regional use of the renminbi

Public purpose	Private purpose
• Payment currency in BSAs between central banks and: ➢ Korea: USD 6 billion (Mar 2002) ➢ Japan: USD 8 billion (Jun 2002) ➢ Philippines : USD 2 billion (Aug 2003 and Apr 2004)	• Trade settlement currency with neighbouring countries including Vietnam, Mongolia, Cambodia. Etc By the end of 2007, total related flows of CNY were equivalent to USD 360 billion Among them, USD 53 billion worth of CNY left the country
• Payment currency in bilateral swap arrangement between central banks, with ➢ Korea: CNY 180 billion (12 Dec, 2009) ➢ HKMA: CNY 200 billion (20 Jan, 2009) ➢ Malaysia: CNY 80 billion (8 Feb, 2009) ➢ Belarus: CNY 20 billion (11 Mar, 2009)	• CNY deposits in HK: ➢ Launched on 25 Feb, 2004 ➢ Initial amount of CNY 895 million (Feb 2004) ➢ Peak of CNY 78 billion (May 2008) • CNY bond issuance in HK by policy and commercial banks ➢ China Development Bank: CNY 5 billion in renminbi-denominated bonds (Jun 2007). ➢ Export-Import Bank of China: CNY 2 billion in renminbi-denominated bonds (Jun-Jul, 2007) ➢ Bank of China: CNY 3 billion in renminbi-denominated bonds (Sep 2007) ➢ Bank of Communications: no more than CNY 5 billion in renminbi-denominated bonds (Mar 2008) • CNY government bond issuance under ABF2 ➢ Launched in Jun 2005 ➢ With seeds fund: USD 2 billion

Note: The authors are grateful to Dr Li Jian for her help in collecting the data.

A back-of-the-envelope calculation shows that the total amount of renminbi involved in international/regional use was about CNY 300 billion, accounting for only a small fraction of China's broad money of CNY 40 trillion by the end of 2007. In other words, internationalisation of the renminbi is very limited in scope and is just beginning.

2. The benefits and costs of internationalisation of the renminbi

As discussed above, the process of internationalisation of the renminbi is ad hoc to say the least. An important question is whether China really wishes to internationalise its currency: the answer is both yes and no.

2.1 The benefits of internationalisation of the renminbi

The potential benefits of internationalisation of the renminbi are obvious. First, it would reduce the exchange rate risk facing Chinese firms: (i) internationalisation of the renminbi means that more foreign trade and financial transactions would be invoiced and settled in the renminbi, hence the exchange rate risk for Chinese firms would be reduced accordingly, although demand risk would remain; (ii) the increase in the weight of renminbi-denominated assets in financial institutions would reduce the impact of foreign exchange risk in the computation of the BIS capital adequacy requirements; (iii) the risks associated with foreign currency denominated funds would also be reduced; and (iv) an internationalised renminbi

would make it possible to tackle the problem of "original sin" which many emerging economies have to live with.

Second, the internationalisation of the renminbi would improve the funding efficiency of Chinese financial institutions, thereby greatly increasing their international competitiveness, because they would enjoy the advantage of having easier access to the vast pool of renminbi assets. That competitiveness would, in turn, promote the expansion of China's financial service sector. Although internationalisation of the renminbi is not a necessary condition for establishing a financial centre in China, it would greatly help the endeavour.

Third, internationalisation of the renminbi could boost cross-border transactions: (i) the cross-border flows of the renminbi brought about by real economic activities such as cross-border trade and travel could provide an effective settlement method in bilateral transactions; and (ii) it could also enlarge bilateral trade and economic cooperation and promote the economic development of frontier regions inhabited by minority nationalities.

Fourth, internationalisation of the renminbi means that the renminbi would be held by non-residents, which would allow the Chinese monetary authority to collect seigniorage from the rest of world. Seigniorage is the margin between the denomination of the notes and the cost of issuing the notes obtained by the note issuer. Issuing a world currency is equivalent to levying seigniorage on other countries.[2] Although China does not have the goal of collecting seigniorage at some point in the future, the internationalisation of the renminbi could at least offset, to some degree, the seigniorage that China has to pay to the United States.

Lastly, internationalisation of the renminbi could help China to preserve the value of its foreign exchange reserves. China is the biggest holder of foreign exchange reserves in the world. However, all its foreign exchange reserves are denominated in foreign reserve currencies, of which more than 70% in the US dollar. If China's claims on the United States were denominated in the renminbi, China would not need to worry about the possibility of suffering huge capital losses on its foreign exchange reserves as a result of the US government's debasing of the US dollar. Currently, because the United States owes China more than USD 1 trillion in US dollar-denominated debt, it can easily inflate away its debt burden. China is at the mercy of the United States.

2.2 The costs of internationalisation of the renminbi

However, the flip side of internationalisation of the renminbi for China is also obvious. Although the internationalisation of a currency is not tantamount to capital account liberalisation and full convertibility of the domestic currency, capital account liberalisation and convertibility are, to a very significant degree, prerequisites of internationalisation. It is fair to say that the reluctance of the Chinese government to give up capital control is the biggest impediment to a wholesale internationalisation of the renminbi in the foreseeable future. The need for maintenance controls over cross-border capital flows is attributable to the following reasons. First, China's financial system is still fragile and, second, it is suffering from over-monetisation. An M2/GDP ratio of 180% in China means that capital outflows may be huge if capital controls are dismantled. Without capital controls, the foreign exchange requirement would be very large and costly. Third, China's capital markets are still too shallow. Any significant changes in cross-border capital flows may easily lead to large fluctuations in China's asset prices. Fourth, China's economic structure is still inflexible. Enterprises are

[2] Seigniorage is frequently identified as one of the benefits derived from the internationalisation of a currency. However, in practice, seigniorage resulting from the use of one's own currency as an international currency should be viewed as no more than a secondary benefit, and it would not be appropriate to identify seigniorage as one of the objectives of the internationalisation of the renminbi.

slow to adjust to exchange rate and interest rate changes, and they need capital controls to provide them with breathing space. Fifth, China's financial institutions lack competitiveness and some protection is still needed (infant industry argument). All the above-mentioned arguments for capital controls can be used to argue against renminbi liberalisation.

Even if the capital account were fully liberalised and the renminbi were made fully convertible, internationalisation of the renminbi could still be problematic. Experience from the Asian financial crisis has shown that if a currency is fully internationalised, which means that it can easily be obtained in international financial markets, the country with an internationalised currency will be very vulnerable to speculative attacks from international speculators. The experiences of Malaysia and Hong Kong are two contrasting cases in point. The Malaysian ringgit was internationalised, with the result that speculators were able to collect ringgit from financial markets outside Malaysia and launch an effective attack on it. In contrast, though fully convertible, the Hong Kong dollar was not internationalised. Consequently, before launching a decisive attack on the Hong Kong dollar, international speculators had to raise Hong Kong dollars from the interbank money market in Hong Kong. The unavailability of the Hong Kong dollar abroad gave the Hong Kong Monetary Authority the policy space to dramatically raise the interest rate in the money market and successfully beat back the attack.

2.3 Implications for monetary policy

Because internationalisation of the renminbi would have a major bearing on China's monetary policy, its pros and cons will be discussed in a separate subsection. The policy implications of internationalisation of the renminbi are difficult to address for three reasons. First, it is always difficult to distinguish the impact of currency internationalisation on monetary policy from that of other factors, such as the development of financial markets, the liberalisation of financial sectors and increasing trade and financial integration. Second, although it is assumed that currency internationalisation impacts on monetary policy mainly via its impact on the monetary policy transmission mechanism, a sound and well established analytical framework is still absent. Third, the renminbi is far from being an international currency, and its use internationally and regionally is still very limited. Hence, the absence of data makes it difficult to discuss the relationship between the not-yet internationalised renminbi and China's monetary policy. As it is difficult to carry out an empirical study and draw reasonable implications from statistical findings, the discussion on this subject is mainly conceptual.

Generally speaking, there are three major elements in monetary policy transmission mechanisms: interest rates, exchange rates and wealth effects (Cassola (2000)).

First, internationalisation of the renminbi would stimulate the development of direct finance by increasing its private usage in bond and other debt securities and equity markets, which would bring about a quicker adjustment of market interest rates to the changes in official interest rates. This is because a more liquid and sophisticated financial market would be created following the enlarged usage of renminbi financial instruments. For instance, when the Chinese monetary authority decides to tighten its monetary policy, it usually increases the official rate or reduces the supply of base money. In the case of interest rate hiking, given price stickiness, market interest rates would react to the policy change. Real short-term exchange rates and even longer-term exchange rates would rise in response to tight policy. As a result, investment or consumption demand would be likely to decline, as would aggregate demand and output. The international use of the renminbi would, to a large degree, impact on the effectiveness of this transmission mechanism. The more liquid the financial market, the more sensitive the market interest rates are to changes in the official rate. In other words, internationalisation of the renminbi would reinforce the effectiveness of monetary policy. However, one key feature of the interest rate channel in China is that interest rates are inflexible and not entirely determined by market forces. Therefore, before

taking full advantage of the quicker response of the interest rate resulting from a more international use of the renminbi, a more liberalised interest rate mechanism should be put in place.

Second, internationalisation of the renminbi would stimulate arbitrage activities in response to monetary policy changes. In the case of monetary tightening, an interest rate hike would cause currency appreciation, given the free flow of capital across the border. If the interest rate or spot exchange rate deviate from the anticipated interest rate and exchange rate, or the real exchange rate deviates from the nominal exchange rate – which, in the case of monetary tightening, is presumed to be favourable for the holding of renminbi assets – international investors would carry out interest arbitrage by buying more renminbi assets. The consequence of interest arbitrage, in theory, would narrow the interest differentials between countries and between currencies, which would have an offsetting effect on domestic monetary policy changes. The feedback effect also exists. Changes in monetary policy in other countries may also have an impact on interest rate and exchange rate arbitrage, because they also change interest rate differentials and exchange rate expectations. The adverse impact of this becomes evident, because arbitrage with large amounts of instant funds is very likely to stimulate short-term speculative capital flows. It may also create a "herd effect" and have a negative impact on China's economic stability. This is one of the reasons why some countries, such as Japan and Germany, were hesitant to let their currencies be internationalised. Again, the intensity of the effects of interest arbitrage depends on the degree of flexibility of the interest rate and exchange rate, and on the extent of capital account liberalisation. It is fair to say that the basic conditions for large-scale arbitrage against the renminbi do not currently exist, given the limited flexibility of the interest rate and exchange rate and the absence of a fully liberalised capital account. The liberalisation of capital transactions is indeed on the policy agenda, but short-term flows are still basically controlled, which, to a large degree, limits the arbitrage activity against the renminbi.

Third, internationalisation of the renminbi could also have an impact on the effectiveness of monetary policy via wealth effects. A decline in the official interest rate aimed at stimulating investment spending would induce a hike in asset prices by increasing the earnings from the holding of renminbi assets. Correspondingly, the market value of firms would go up, which would give firms greater incentives for investment spending. International use of the renminbi would thereby allow extra funds to flow into the renminbi equity market, and hence enlarge the wealth effects of loose monetary policy.

Fourth, internationalisation of the renminbi would result in currency substitution and an increase in renminbi deposits in third countries. There are no clear-cut theoretical explanations to confirm whether currency substitution and an increase in renminbi deposits in third countries would have an impact on money demand. There might be different outcomes, depending on whether the increase in holdings is made by non-residents or by residents in third countries. For non-resident holdings, there might be a weak link to money demand, but for resident holdings outside China, the impact of changes in renminbi holdings on the stability of money demand could be significant.

Lastly, another factor that needs to be considered is the likelihood of the growth of the euro-renminbi market. The development of the eurodollar market was mainly due to the restrictions of the US regulations on international lending and investments in the 1960s. Similarly, when the German monetary authority restricted non-residents from issuing Deutsche mark bonds in the 1970s, the euro-DM market which had developed outside Germany grew rapidly. The most important reason for the development of the eurodollar market is the real or fundamental factors associated with the size of an economy and the growing influence of that economy in international trade, investment and financial transactions. Therefore, following the strengthening of the real factors, market forces would dominate and, sooner or later, the government would be forced to abandon the restrictions on international use of the home currency.

The German government used to be concerned about the arbitrage between domestic and euro-DM markets, because of the extra burden it might place on its monetary policy and, in particular, on intervention in the interbank markets. The Japanese government had the same experience, whereby it was apprehensive of the arbitrage between domestic and euroyen markets, which could disturb its monetary policy, complicating both its intervention in the bill and call markets and its "window guidance". The Japanese monetary authority resisted internationalising the yen for decades. However, after recognising that the interest rates and volume of transactions in the euroyen market were determined by the domestic monetary policy and not vice versa, the Bank of Japan progressively changed its attitude and its "window guidance" was officially terminated in 1991.

Sections 2.2 and 2.3 illustrate the difficulty in quantifying the benefits and costs, and hence the net effect, of currency internationalisation. Furthermore, external factors are equivalently important when considering the rationales for internationalisation of the renminbi. In other words, for internationalisation of the renminbi, whether other countries are willing to accept the renminbi in international transactions for both private and public purposes is as important as whether China wishes to internationalise its currency.

3. The conditions and road map for internationalisation of the renminbi

Having discussed the ways in which the renminbi is currently used both internationally and regionally, and the possible benefits and costs of internationalisation of the renminbi, we first need to question whether China really wishes to internationalise its currency. If the answer is yes, then the second question is how. Here, we can assume that China wishes to internationalise the renminbi. With regard to the question of how internationalisation of the renminbi can be realised, one critical issue stands out: is there a model that China can follow? More specifically, in the long term, should China be like the United States, playing a global role individually, or like Germany, being fully integrated with Asia? This is a strategic question underlying China's policy towards renminbi internationalisation or regionalisation. In other words, would the Chinese currency be an independent international currency parallel to the dollar and the euro, or merged with other Asian currencies to become a component of the new single Asian currency?

3.1 Internationalisation vs regionalisation

The US dollar and the euro are the two successful examples of currency internationalisation since the end of the Second World War. However, the two currencies have taken different routes in becoming international currencies, roughly classified as the American approach and the German approach.

The American approach is basically a monopoly one, meaning that the US dollar is playing a dominant global, independent role. The status of the US dollar as an international currency was determined both by economic and by political factors. Following the American approach would lead China to pursue the strategy of having the renminbi used as an independent international currency in parallel to the US dollar, the euro and, perhaps, the yen.

The German approach refers to currency regionalisation through a series of concrete steps, from a regional currency mechanism, the ERM, towards a single currency replacing all the individual members' currencies. Given that this approach results in the eventual elimination of individual currencies, if China were to follow this approach, it should involve itself in a fully fledged monetary union in Asia, and, in the final stage, the renminbi would be diminished and replaced by a new Asian single currency.

It is premature to decide which approach is preferable for China. However, the current financial crisis means that China is in a position to seek a bigger financial role, both in Asia and globally, than ever before. Recently, China signed four bilateral currency swap agreements with its neighbours, which has reduced the need for the existing regional multilateral agreement. It seems that, at a certain stage of monetary cooperation, regional development conflicts with global strategy. Therefore, the tough issue for internationalisation of the renminbi is whether there is a feasible road map for China to encourage the use of the renminbi in Asia, based on both market need and political consideration, and then, gradually, to have the renminbi used internationally.

We do not think that there is any well thought-out plan for internationalisation of the renminbi in China. As mentioned above, the renminbi has made some headway in becoming both internationalised and regionalised in response to the Asian financial crisis and its follow-up. Since the US subprime crisis, the internationalisation of the renminbi seems to have been given new impetus.

So far, as summarised in Table 3 above, internationalisation of the renminbi has seen it take the form of an invoicing and settlement currency in trade with its neighbouring countries, a vehicle currency in swap agreements and a denominating currency for bonds issued in Hong Kong and in relation to ABF2. Measured against any criteria, the degree of internationalisation of the renminbi is extremely limited.

The current, more positive, attitudes demonstrated by the Chinese monetary authority towards internationalisation of the renminbi are a result of the concern over the potential losses in China's foreign assets and, to a lesser degree, are related to the desire to avoid exchange rate risk. The simple reality is that, so far, China has accumulated USD 2 trillion in foreign exchange reserves, more than 70% of which are held in the form of US reserve assets denominated in US dollars. Since the onset of the crisis, the US Federal Reserve has adopted an extremely expansionary monetary policy. "Helicopter Ben" has been dropping greenbacks in a big way. As a result, the Federal Reserve's balance sheet has almost doubled since July 2007. At the same time, the US government is going to raise more than USD 2 trillion by issuing government securities. The US budget deficit/GDP ratio may exceed 12% in 2009. The current strength of the US dollar is likely to be a temporary phenomenon. In the long run, the devaluation of the US dollar seems inevitable, as do the prices of US government securities. As pointed out by Paul Krugman recently: "China had driven itself into a dollar trap. China acquired its $2 trillion stash – turning the People's Republic into the T-bills Republic – the same way Britain acquired its empire: in a fit of absence of mind. And just the other day, it seems, China's leaders woke up and realised that they had a problem […] they are, apparently, worried about the fact that around 70 percent of those assets are dollar-denominated, so any future fall in the dollar would mean a big capital loss for China." What China can do at this late stage is limited. However, China has to exhaust all possible avenues to limit the possible damage, while avoiding mishandling the problem and making it worse. Against this backdrop, internationalisation of the renminbi, together with reform of the international monetary and financial system and regional financial cooperation, is moving up on policy agenda.

The current international monetary system is characterised by the dominance of the US dollar as an international reserve currency and the prevalence of the de facto dollar standard. The system enables the United States to continuously register a massive current account deficit and become the world's largest debtor. Because US debts are dollar-denominated, there is no discipline that can be imposed by foreign countries on the US monetary authority. If the authority wishes to inflate away America's debt obligations, it can easily do so, which, in turn, means capital losses for dollar asset holders worldwide. Against this backdrop, China raised the issue of international monetary and financial system reform, leading Governor Zhou of the People's Bank of China to call for the creation of "an international reserve currency that is disconnected from individual nations and is able to remain stable in the long run, thus removing the inherent deficiencies caused by using credit-

based national currencies". According to our understanding, the thrust of Zhou's call is the suggestion to gradually replace the US dollar with SDR. If national currencies were converted into SDR, which is a basket of currencies, the threat of dollar devaluation to the value of foreign exchange reserves held by the rest of world, China in particular, would be reduced. However, reform of the international monetary system is more easily said than done. The United States will never give up the dollar's privilege as an unchallenged reserve currency.

Of course, China could be more actively engaged in currency swaps, contribute more to the regional funding pool, and also do more to encourage the use of the renminbi in the settlement of trade and financial transactions. Although these measures would be of some help in slowing down China's accumulation of US dollar-denominated assets, their role in safeguarding the value of those assets is very limited.

While recognising the limitations of internationalisation of the renminbi in containing the possible losses of China's US dollar-denominated financial assets, it is very clear that, if the renminbi were internationalised, and if a large portion of China's claims on the United States were renminbi-denominated, China would fare much better. The Chinese leadership would be less worried about the value of China's foreign assets. Furthermore, China's current experience shows that, regardless of whether China's ultimate objective is to create a regional currency, such as an Asian currency, or to make the renminbi an international currency side by side with the US dollar, the euro and the yen, the internationalisation of the renminbi, which is just in its initial stages, would be beneficial for both objectives and do no harm to either. Therefore, in the long run, China should establish a programme, and create the conditions, for the internationalisation of the renminbi. .

3.2 Conditions for the internationalisation of the renminbi

The general conditions for internationalising a currency highlighted by the literature include: the provider's political and military power, economic size, financial strength, the degree of financial market development, and history (Frankel (1999), Michalopoulos (2006)). Aside from that, the stability and predictability of a currency's intrinsic value and the availability of broad transactional networks will define the functional domains of individual currencies. More especially, the internationalisation of a currency requires the support of low-inflation credibility, a reasonable interest rate and exchange rate, and full convertibility of the currency to ensure easy availability of the international currency.

China's increasing importance in the world economy

After 30 years of reform and opening-up, China has become one of the most dynamic economies in the world. Furthermore, according to an analysis based on a GTAP simulation: by 2025, China's share in global GDP will increase from 5% to 11.6% (assuming 20% growth in total factor productivity (TFP)), overtaking Japan's share and enabling China to become the third largest economy in the world. The other two scenarios show that even a lower growth rate of TFP does not significantly change the results. For instance, under the assumption of zero TFP growth, China's GDP share would be slightly below that of Japan by 2025, which would allow China to remain the fourth largest economy in the world (Table 5). The growing size of the Chinese economy will be strongly supportive of the renminbi playing an ever bigger global role.

Table 5

Projection of the size of major economies

Share of world GDP		US	EU 25	Japan	China
2005		28.1	30.3	10.3	5.0
2025	low	31.5	23.7	8.1	7.0
	middle	31.4	23.7	8.1	8.9
	high	31.4	23.7	8.1	11.6

Note: We assume that the growth rate of population, capital formation and labour market conditions are unchanged in all three scenarios. The "low", "middle", and "high" scenarios mean that the TFP of China's industries as a whole grows at the rate of zero, 10% and 20%, respectively.

Source: Calculation by Li Zhongmin of the Institute of World Economics and Politics, CASS.

Full convertibility of the renminbi

Before 1930, the concept of convertibility was generally defined as the right to convert a currency freely into gold at a fixed rate. Today, a currency can be regarded as "fully convertible" when any holder is free to convert it at a market rate into one of the major international reserve currencies (Greene (1991)). Therefore, the degree of convertibility is the key to the internationalisation of a currency.

As far as currency convertibility is concerned, the renminbi is far from a "convenient" currency for foreign holders. Although it is convertible under the current account, the capital account is still controlled in many aspects, mainly with regard to securities and assets, and short-term flows. The increasing private use of the renminbi in Asia for, among other things, consumption, as a tourist currency, in border trade payments and, to a certain degree, in official use is mainly a reflection of the importance of the Chinese economy in Asia. The limitation in the use of the renminbi comes mainly from the current capital controls on China's capital account transactions. As indicated in the previous section, apart from free flows of foreign direct investment (FDI), other capital transactions, especially short-term capital flows, are controlled. Without full convertibility, the renminbi would not easily be accepted for a wider range of purposes by both residents and non-residents.

The development of the domestic financial market and financial liberalisation

Historical experience shows that a developed financial market is the key element for the use of a currency as an international vehicle currency. The collapse of the Bretton Woods system did not bring an end to the dollar's status as an international currency. One reason for this is that the United States, compared with its two competitors, Europe and Japan, has the deepest and widest financial market in the world. Currently, China's financial system is characterised by overbanking and a lack of a mature capital market. A wide and deep financial market has not yet been developed to the level required for internationalisation of the renminbi.

More specifically, due to the inadequacy of the Chinese money market, a benchmark interest rate equivalent to the Federal Reserve funds rate in the United States, the bank rate in the United Kingdom and the official discount rate and overnight call rate in Japan does not exist. Interest rates are partially liberalised, with a few key short-term interbank interest rates determined by markets. The interest rate policy of the PBoC has limited influence on the economy's interest rate structure as a whole, thereby limiting the ability of China's monetary authority to take full advantage of the quick response of the interest rate resulting from a

more international use of the renminbi. Therefore, a more liberalised interest rate mechanism should be put in place prior to internationalisation of the renminbi.

The renminbi offshore market

The development of the offshore market and currency internationalisation go hand in hand. Currency convertibility and the increasing use of a currency in international pricing, settlement, purchase and payment are prerequisites for the development of the offshore market. Meanwhile, the offshore market, with its own purpose for financial transactions conducted outside the territory of the currency-issuing country, and which is not subject to the country's jurisdiction, is an inseparable part of the international use of a currency. Currently, although a few transaction types exist, such as the renminbi non-deliverable forwards traded in Hong Kong and some other Asian cities, the renminbi has not been a standard offshore currency. Before the renminbi becomes fully convertible, it will be difficult to establish the offshore renminbi market, and without a well developed offshore market, internationalisation of the renminbi would also be difficult.

The flexibility of the renminbi exchange rate

In practical terms, the function of an international currency does not depend on the type of exchange rate regime. Taking the US dollar as an example, since the establishment of the Bretton Woods system, the dollar has experienced different types of exchange rate regime, from an adjustable one to a floating one. However, the changing exchange rate regimes did not change the dollar's status as an international currency. The relationship between the demand for the dollar and its exchange rate regime is unclear. Therefore, the question of whether a free-floating exchange rate regime should be a precondition for the internationalisation of the renminbi cannot be answered with certainty.

3.3 Capital controls vis-à-vis internationalisation of the renminbi

Internationalisation of the renminbi is not necessarily a one-off process, and full internationalisation can be achieved in a gradual way. Among the conditions discussed above, some are long-term factors which are not achievable in the short run and in a segmented way. However, convertibility of the renminbi, which is equivalent to the liberalisation of the capital account, can be achieved step by step, in parallel with the process of renminbi internationalisation. A well sequenced process of capital account liberalisation will contribute greatly to a smooth realisation of the internationalisation of the renminbi.

China's capital controls have prohibited non-residents from obtaining renminbi assets. The structure of the capital controls determines, to a large degree, through what channels and in what amounts the renminbi can be obtained and used by non-residents domestically and by residents externally.

China's policy on opening up financially has always been cautious. In the past few decades, a gradual approach to capital account convertibility has allowed the relaxation of China's capital controls to be carried out in a well designed sequence – namely, by liberalising long-term flows before short-term flows, liberalising direct flows before indirect flows, and protecting the country's weak domestic sectors from external competition and unwanted shocks. According to the IMF definition of categories of capital controls, by the end of 2007, of 43 items, 12 were completely convertible or subject to minimum restrictions (upon registration with or approval from administrative bodies), 16 were partially liberalised and 15 were non-convertible. This indicates that, in China, half of the types of capital account transaction are currently subject to controls, and half of the types of cross-border capital transaction are open to both non-residents and residents. Table 6 provides an outline of the framework of capital controls in China as of the end of 2007.

Table 6

Controls on capital and money markets in China (as of end-December 2007)

		Inflows[1]	**Outflows**[2]
Stock market	Non-residents	Purchase of B shares and QFIIs[3] subject to a set of limitations	Sale of B shares, repatriation by QFIIs
	Residents	Sale of B, H, N and S shares abroad	QDIIs[4]
Bonds and other debt securities	Non-residents	QFIIs	International development agencies are permitted to issue CNY-denominated bonds locally, with the approval of the Ministry of Finance, the PBoC and the National Development and Reform Commission
	Residents	Prior approval by the State Council for Examination and the SAFE[5] Earnings should be repatriated	Domestic insurance companies, securities firms and qualified domestic banks may purchase foreign bonds that meet rating requirements, subject to the approval of the CIRC[6] and the SAFE
Money market	Non-residents	QFIIs	No permission
	Residents	Bonds with less than one year duration and commercial instruments, approval by the SAFE	Authorised entities (insurance companies, securities firms and qualified domestic banks)
Collective investment securities	Non-residents	QFIIs invest in domestic closed-end and open-end funds	No permission
	Residents	Prior approval by the State Council for Examination and the SAFE Earnings should be repatriated	No permission for residents, except authorised entities
Direct investment		Free. Inward remittances converted into renminbi	Subject to the SAFE reviewing sources of foreign exchange asset investments abroad

[1] Purchased locally by non-residents; sold or issued abroad by residents. [2] Sold or issued locally by non-residents; purchased abroad by residents. [3] Qualified Foreign Institutional Investors. [4] Qualified Domestic Institutional investors. [5] State Administration of Foreign Exchange. [6] China Insurance Regulatory Commission.

Sources: IMF, *Annual Report on Exchange Arrangements and Exchange Restrictions*, 2007; SAFE; authors' calculations.

The liberalisation of inbound FDI flows

The liberalisation of inbound FDI flows in China was actually the first step in China's capital account liberalisation. It started at the very beginning of China's opening-up in the late 1970s. Currently, controls over FDI are more liberalised than the controls over any other international financial transaction. As long as non-residents meet the requirements under Sino-foreign joint venture laws and other relevant regulations, and are approved by the Ministry of Commerce of China, non-residents are free to invest in China. There is no restriction on the inward remittance of funds. For outward direct investment, foreign exchange is provided for the investment after the State Administration of Foreign Exchange (SAFE) has reviewed the sources of the foreign exchange assets and assessed the investment risks involved. This legal framework, combined with many policy-related incentives for inward direct investment, reflects the fact that China places an emphasis in its financial opening-up policy on attracting a high level of FDI. As a result, FDI inflows have exceeded all other forms of cross-border investment, thereby dominating China's cross-border capital movements in the past two decades.

Despite the debate on the optimal level of FDI inflows, the rapid growth of FDI has become the most prominent factor in China's integration with global financial markets. Moreover, because FDI is particularly relevant with regard to production networks, where China acts as a hub for other countries in Asia, Asia has been the major source of China's FDI inflows. Asia's FDI flows have accounted for over 50% of China's total FDI inflows since 2001, whilst the ratios of the United States and the euro area have been less than 10%, respectively, except for the US in 2002. Such geographical distribution reflects the fact that non-residents with free permission for remittance of FDI converted into the renminbi are mainly from the Asia region.

Limited portfolio flows

China's securities flows are still relatively tightly restricted. Portfolio flows started in 1991 when the Shanghai Stock Exchange (SHSE) and the Shenzhen Stock Exchange (SZSE) began to offer B shares, providing foreign investors with a legal channel to invest in China's equity markets. Other channels, such as H shares for foreign capital investing in China's overseas issues in Hong Kong, American depository receipts (ADRs), global depository receipts (GDRs), convertible bonds and dual-listed shares, followed in subsequent years. Those measures were part of the agenda for reforming China's state-owned enterprises (SOEs) in the early period of opening up. The most significant step in opening up China's domestic capital market was the introduction of the Qualified Foreign Institutional Investor (QFII) scheme in 2002. The aim of the QFII scheme was to utilise the international experience of QFIIs in order to standardise various rules and regulations in the A-share market, introduce financial innovations into the domestic market, and allow domestic financial institutions to learn from their foreign counterparts the leading theories and practices in the international financial markets and the "value investment" philosophy advocated by the QFIIs. In 2007, China implemented the Qualified Domestic Institutional Investor (QDII) scheme, allowing domestic institutional investors to invest in overseas markets. The QDII system enabled domestic investors to allocate their assets throughout the world. One of the driving forces behind the introduction of the QDII was the huge amount of foreign reserves and the resulting inflationary pressure on the domestic economy. The government wished to channel the outflow of capital in an orderly manner through the QDII scheme and to reduce the pressure on reserve accumulation. Currently, all qualified domestic commercial banks, insurance companies, fund companies and securities companies can conduct QDII business. In short, so far, the B-share and H-share markets and the QFII and QDII schemes are the main channels for opening securities transactions under China's capital account.

Unlike stock markets, China's fixed income securities markets remain tightly closed to foreign investors. Non-resident investors are not allowed to perform any transactions locally in China's bond and other renminbi-denominated debt instruments in the medium term.

Renminbi-denominated overseas bond issuances, mainly in Hong Kong, were first launched in June 2007, for the very limited amount of USD 10 million by three Chinese banks.

Controls over the banking sector

China's control over the entry of foreign banks has been gradually liberalised since the first branch of a foreign bank, the Nan Yang Commercial Bank's Shenzhen branch, was established in 1981. However, most of the regulations and laws on foreign financial institutions were established later, beginning in 1994. A landmark year in the opening-up of China's banking sector was 1996, when foreign banks in China were allowed to engage in the business of selling and purchasing foreign exchange for Foreign Fund Entrepreneurs (FFEs) and to become authorised banks dealing with foreign exchange. This was the first step towards opening renminbi-based business to foreigners.

China's commitment to joining the World Trade Organization has played an important role in the opening-up of its banking sector. In 2001, China agreed to lift all geographical and business restrictions for foreign banks in the following five years. The relaxation of banking business has brought about a sharp increase in China's foreign bank claims since 2003. At the end of March 2008, China's top three foreign claims were by banks in the United Kingdom, the United States and Japan. By the end of 2007, 193 banks from 47 countries and regions had set up 242 representative offices in China. In addition, foreign banks in China included 24 wholly foreign-owned banks (with 119 branches), two joint venture banks (with five branches and one subsidiary), three wholly foreign-owned finance companies, and 117 branches set up by 71 foreign banks from 23 countries and regions. The assets of foreign banking institutions amounted to CNY 1.25 trillion, accounting for 2.4% of the total banking assets in China. By the end of 2007, 25 locally incorporated foreign banks and 57 foreign bank branches were licensed to provide renminbi business, and 50 foreign banking institutions were granted permission to engage in derivatives transactions (CBRC (2007)).

Because China has dismantled most of its capital controls, internationalisation of the renminbi can be conducted accordingly. For example, China may still need to control foreign borrowing by residents, but it should encourage non-residents to borrow from China with their liabilities denominated in the renminbi. The issuance of "Panda" bonds by non-residents is a case in point. It seems that the breakthrough can be achieved by encouraging non-residents to raise funds through the issue of renminbi-denominated bonds, regardless of the final currency the borrowers wish to hold. If the borrowers need US dollars, they can first borrow in renminbi by issuing Panda bonds and then use the proceeds to buy the US dollars held by Chinese residents. Similarly, backed up by cross-currency swaps, consortia can be organised among Chinese commercial banks and renminbi loans can be provided to foreign banks in need of US dollars. In short, there are plenty of ways of promoting the international use of the renminbi without totally dismantling capital controls. In other words, a balance can be struck between internationalisation of the renminbi, which implies a more efficient use of financial resources and less exchange risk for domestic firms, and financial stability.

Conclusion

To correct the long-lasting global imbalance under the shadow of the global financial crisis, the world needs to reform the current international financial architecture where the US dollar dominates. In doing so, currency diversification is inevitable. While the euro has already become a competitor to the dollar, the Chinese renminbi is hoping to become another, given the fact that China is now the world's number four economy in terms of nominal GDP, number three in terms of trade, and number one in terms of growth. A greater use of the renminbi internationally will be a balancing factor in global financial stability. Moreover,

renminbi internationalisation is also desirable for China, although experiences of other currencies indicate that currency internationalisation is never cost-free.

The success of renminbi internationalisation is dependent on market forces, well designed routes and strategic thinking. The process of internationalising the renminbi can start by boosting cross-border usage of the currency in terms of denominating trade and financial transactions. Region-wide use of the renminbi will be the natural outcome of its coverage of more areas of China's neighbouring countries. Regionalisation of the renminbi could also be the result of policy-driven processes by various means, such as: issuing renminbi bonds (government and corporate bonds); encouraging the use of the renminbi as an invoicing currency in China's free trade agreements (FTAs); signing up currency swap (bilateral and multilateral) agreements using the renminbi as the means of payment; and increasing the use of the renminbi in the regional monitoring system. In the medium and long term, regionalisation of the renminbi will be an inevitable step towards its internationalisation.

Domestic parallel developments are also inseparable from the success of renminbi internationalisation. Among many aspects, the following are crucial: realising full convertibility of the renminbi; liberalising the domestic financial system; achieving greater flexibility of the renminbi exchange rate; strengthening China's financial system; developing domestic money, bond and equity markets; setting up an advanced settlement system; and making the necessary adjustments to the legal system.

Apart from economic aspects, political factors are equally important for the internationalisation of the renminbi, which, to a large degree, depend on China's peaceful rise, Japan's reaction to China's increased influence in Asia, and the United States' reaction to China's global ascent.

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Comments on Haihong Gao and Yongding Yu's paper "Internationalisation of the renminbi" and Hongyi Chen, Wensheng Peng and Chang Shu's paper "The potential of the renminbi as an international currency"

Frank Song[1]

In this note, I first outline the key points of the two papers "Internationalisation of the renminbi" and "The potential of the renminbi as an international currency". I then provide my views about the papers.

A. The first paper

The key points of the first paper are as follows. First, currency diversification is inevitable after the world financial crisis. This is because one of the major concerns of the current financial crisis is that the world relies so heavily on US dollars in trade, financial transactions and international reserves. The US monetary policymakers tend to focus on domestic conditions to set the money supply and interest rates, ignoring their potential impact on the rest of the world. The excessive loose monetary policy since the early 2000s created excessive liquidity in the world market, which, combined with lax regulation of financial institutions, led to the current credit crisis. Therefore, the world is searching for other significant international currencies. Second, given the tremendous growth in the Chinese economy and the rising influence of China in the world economy, the renminbi becomes an important candidate for international currency. Third, there are, however, benefits and costs associated with internationalisation of the renminbi. Specifically, the potential benefits of internationalisation of the renminbi are: a reduction in the exchange rate risk for trading partners; a strengthening of the international competitiveness of Chinese financial institutions; a boost to cross-border transactions; seigniorage; and a preservation of the asset value of China's savings. The risks and costs associated with internationalisation of the renminbi are: larger fluctuations in demand for currency; greater difficulty in maintaining the external balance; increased exposure to the shocks from international capital flows; and a burden of responsibility. In particular, internationalisation of the renminbi could also affect monetary policymaking. Finally, in conclusion, the authors of the first paper argue that internationalisation of the renminbi is desirable for China.

My comments on the first paper are mainly that, first, it is rather difficult to quantify the benefits and costs of internationalisation of the renminbi. In addition, even conceptually, some of the claimed benefits are not necessary real. For example, the benefits of reducing the exchange rate risk may not be transferred to Chinese traders. The potential benefits will be shared by the trading parties, depending on the bargaining powers of the two parties, which eventually depend on the competitiveness of Chinese products. Internationalisation of the renminbi could be a consequence of strong domestic financial institutions and an open financial system, rather than the cause of it. Seigniorage is believed to be small for most of the international currencies. Finally, to make the renminbi international in order to preserve the asset value of China's savings is also a questionable argument. When the renminbi

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becomes an international currency, there is certainly less need to hold foreign currency as an international reserve, as some developed countries do today. However, China's accumulation of huge foreign exchange reserves results mainly from a policy of export promotion policies and the government's centralised exchange reserve management, and is less to do with whether the renminbi is international. For example, Japan also accumulates a huge amount of foreign exchange reserves even though the Japanese yen is rather international.

Of course, some of the costs associated with internationalisation of the renminbi argued in the paper may also not be real costs either. For example, the argument that a larger fluctuation in the demand for the renminbi leads to a less stable monetary policy may not be true. Germany and Japan in the 1960s and 1970s had similar concerns about their monetary policy when the Deutsche mark and the yen were internationalised. These concerns were later believed to be unnecessary, as monetary policy channels in those countries were mainly through the interest rate rather than through money supply. In addition, it seems that internationalisation of the US dollar does not prevent the Federal Reserve from conducting monetary policy solely on domestic conditions. Another popular argument against internationalisation of the renminbi is the exposure of the financial market to shocks in international capital flows. I argue that this concern is mainly due to capital account liberalisation, which is a precondition of internationalisation of the renminbi, not internationalisation of the renminbi per se. If a country already has full capital account liberalisation and currency convertibility, the added costs/benefits of currency internationalisation may be rather small.

Given these concerns, I think it rather hasty to conclude that internationalisation of the renminbi is desirable for China. We need more rigorous and quantitative research in order to answer the important question of whether policymakers should push for internationalisation of the renminbi.

B. The second paper

The key points of the second paper are as follows: (i) the size of the economy and the inertia feature of currency are the dominant factors affecting the internationalisation of currencies. As China's economy increases its influence on the world economy, a potential of the renminbi as a reserve currency is comparable to the case of the Japanese yen and sterling if it is fully convertible; and (ii) the rising role of the renminbi in regional currency movements since the 2005 exchange rate reform.

The second paper complements the first one in that it provides a quantitative assessment of the importance of internationalisation of the renminbi. It is one of the first papers to have done so. However, my comments on this paper are that: (i) the sample period, 1999 to 2006, is too short, and too little time variation across the panel prevents us from performing a rigorous analysis. For example, Li (2007) finds that significant roles of the inflation differential, exchange rate volatility and a depreciation trend of the exchange rate besides the GDP share also affect currency internationalisation; and (ii) the renminbi's effect on regional currency movements may be the causal result of pegging from the dollar to a basket of currencies since 2005.

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Dealing with the benefits and costs of internationalisation of the Korean won[1]

Kyungsoo Kim[2] and Young Kyung Suh[3]

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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[1] Paper prepared for the BoK/BIS seminar on *Currency internationalisation: lessons from the global financial crisis and prospects for the future in Asia and the Pacific*, Seoul, Korea, 19–20 March 2009. The views expressed in this paper are those of the authors and do not necessarily represent those of the Bank of Korea (BoK) or the Bank's policy.

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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.

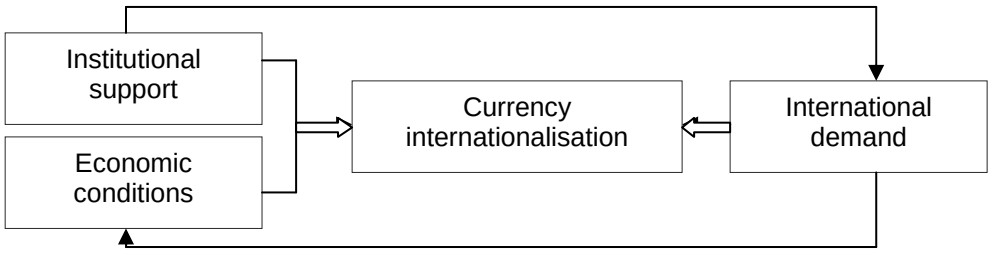
The sections below suggest the prerequisite conditions for the attainment of currency internationalisation in Korea, and delineate the distinctive features of currency internationalisation – including the benefits and costs – by extending the explanation to cover the Korean economy. Section 2 explains 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.

Box 1

Determinants of currency Internationalisation



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[1]
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)

[1] 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**[1]
	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

[1] 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.

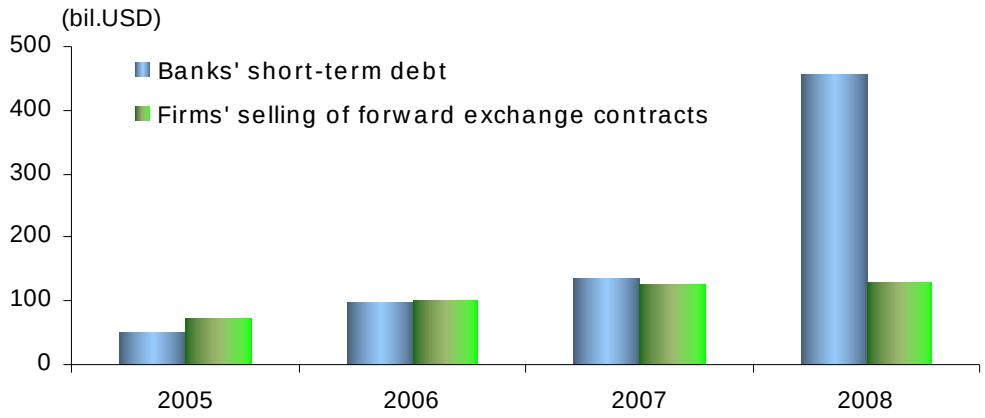
Because the invoice currency is usually a foreign currency, exporters need to hedge future export revenues.[4] The strengthening of the Korean won against the US dollar as from 2003 generated expectations of the won's further appreciation in the Korean foreign exchange market; such expectations were 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.

[4] 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

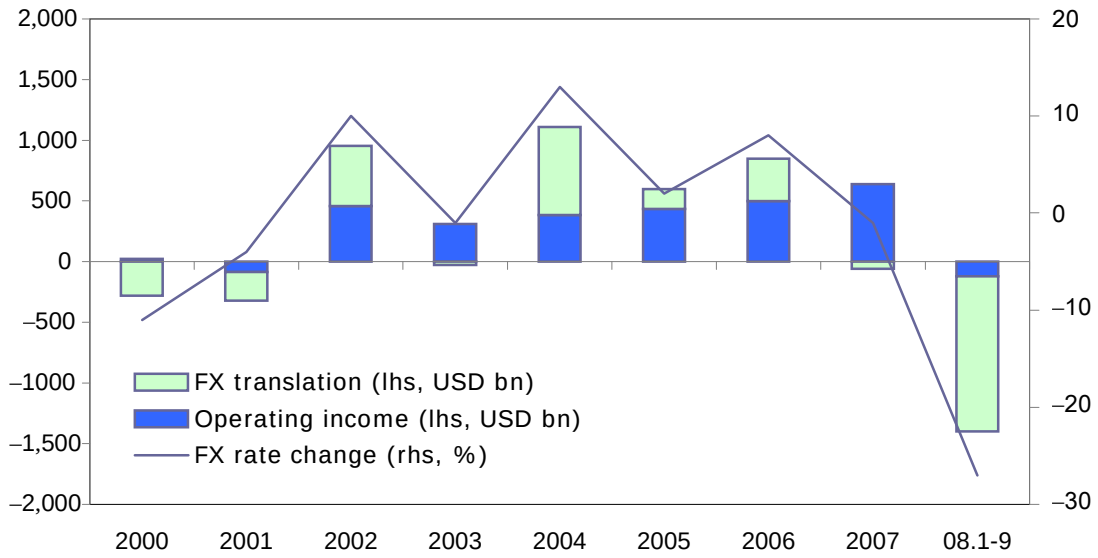
Source: Financial Supervisory Service.

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

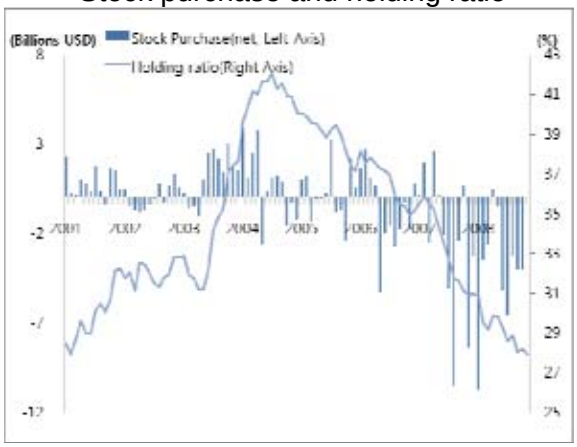
If foreign investors are willing to invest in the country's domestic currency debt, domestic firms and financial institutions can access international financial markets without incurring exchange rate risk. However, in Korea, won-denominated international bond issues or the cross-border liabilities of 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.

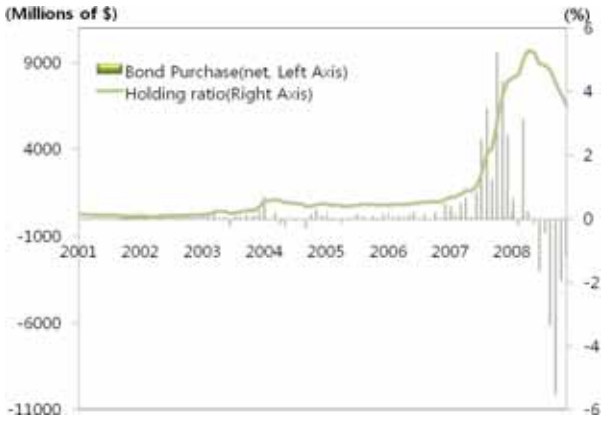
Graph 3

Amounts and proportion of market capitalisation held by foreigners

Stock purchase and holding ratio



Bond purchase and holding ratio)



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[1]	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

[1] 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[p]	Changes	Trade factors[1]	Non-trade factors[2]	As of end-2008[p]	Changes	Trade factors[1]	Non-trade factors[2]
Total	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[3]	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.

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

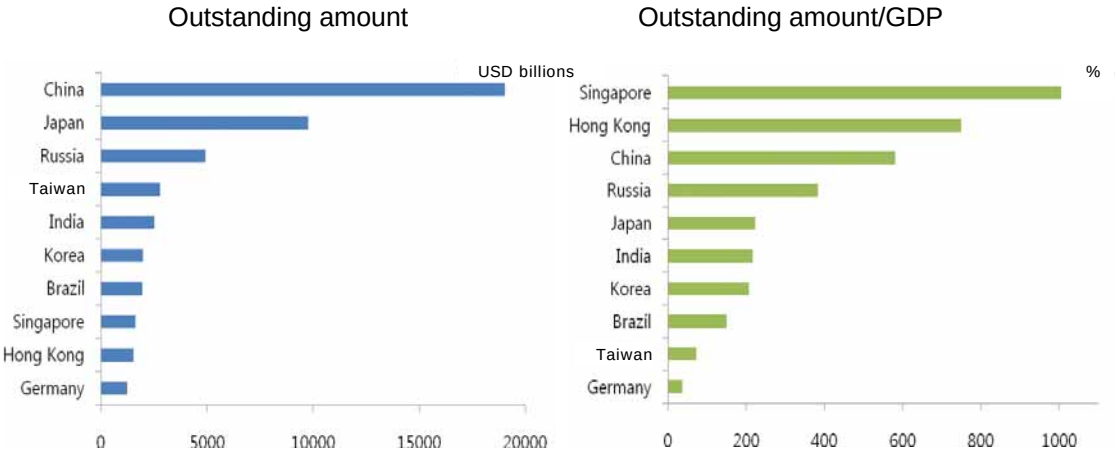
If a currency is not internationalised, a combination of internal and external drains can place extraordinary demands on a central bank's funds. Sometimes, the central bank needs to act as a lender of last resort in the foreign currency to ease the imbalance between demand and supply in the foreign exchange 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.[5] 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[1]



[1] As of the end of November 2008; for Korea, as of the end of January 2009.

[5] 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	Switz-erland	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.[6] 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.

[6] 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.

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

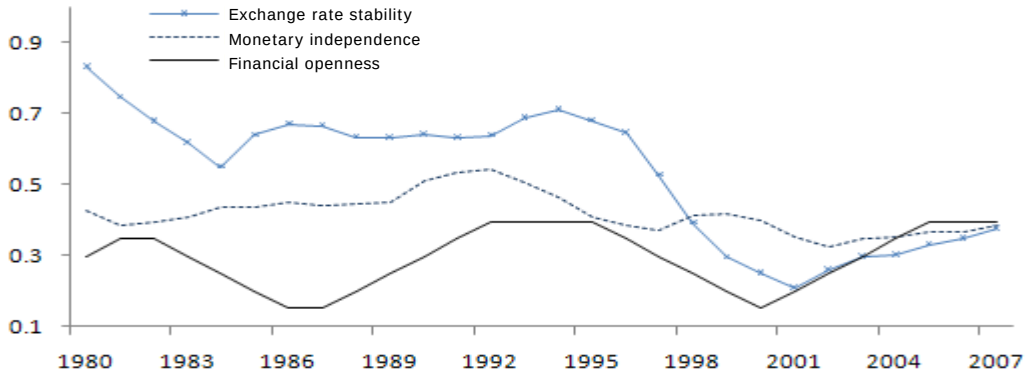
To measure exchange rate stability, annual standard deviations of the monthly exchange rate between the home country and the base country are calculated and included in the following formula to normalise the index between zero and one. Higher values of this index indicate more stable movement of the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

$$ERS = \frac{1}{1 + \frac{stdev(exr)}{|dlogE_t/dt| + 0.01}}$$

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.

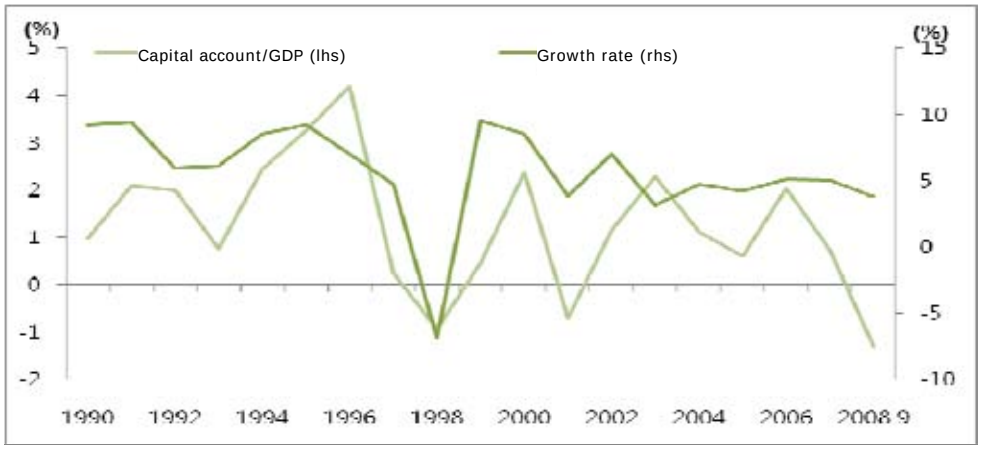
Table 9

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



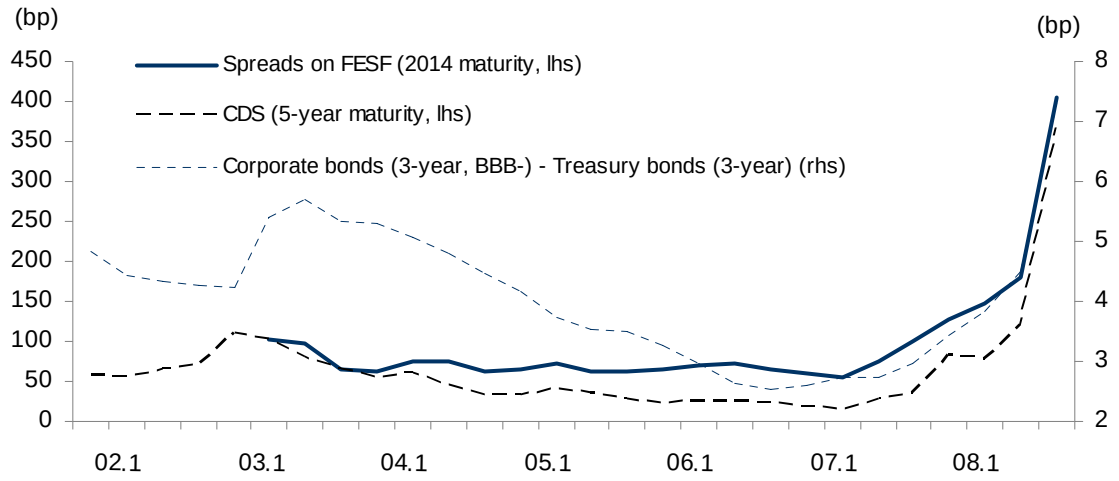
Source: Bank of Korea.

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[1]	East Asia 9[2]	East Asia 3[1]	East Asia 9[2]	East Asia 3[1]	East Asia 9[2]
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

[1] Share of Asia 3 (Korea, China and Japan) in each country's total trade, long-term debt securities and equity securities. [2] 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.

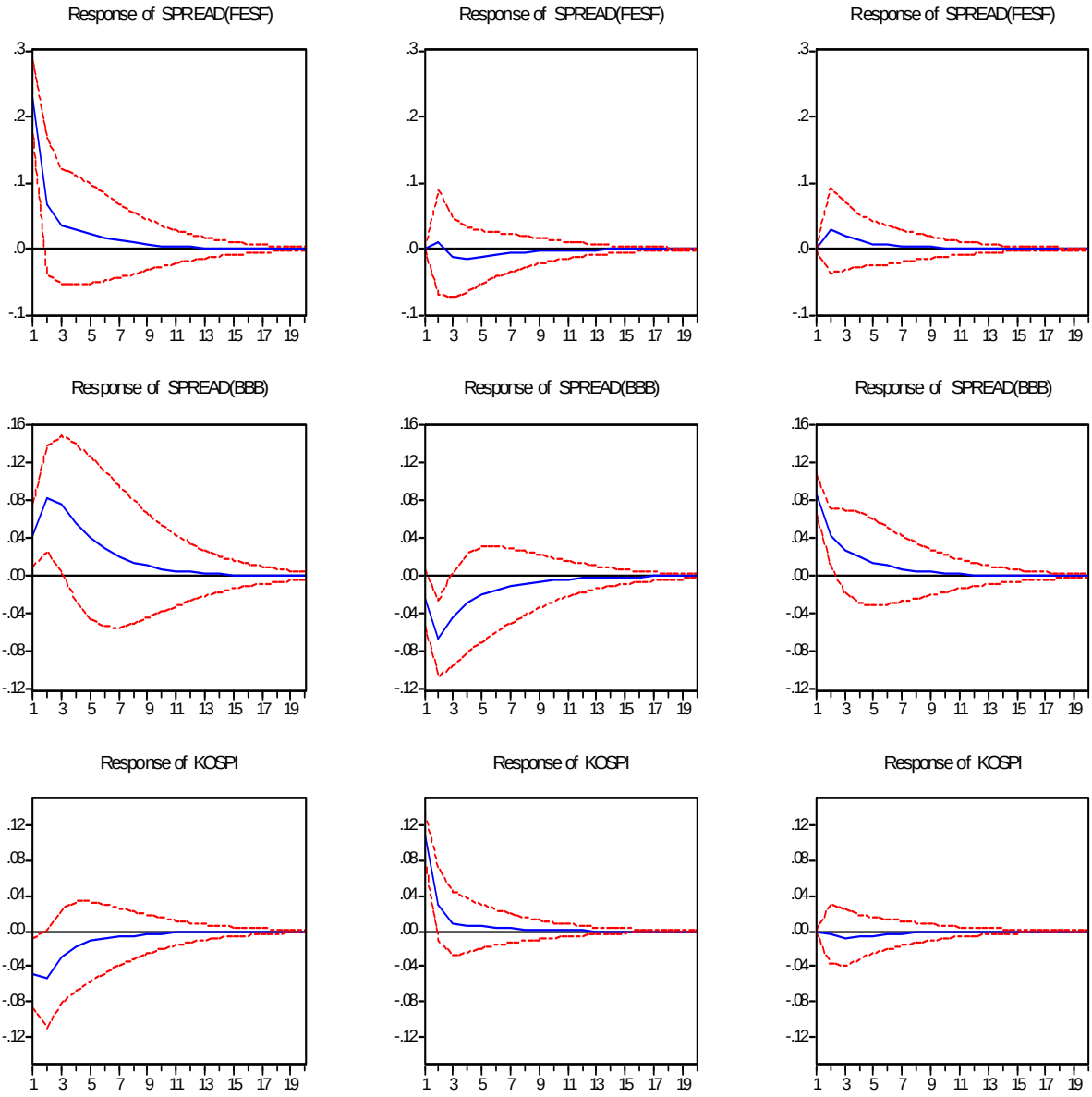
The results of the VAR analysis correspond to what we expected: first, the impulse response of spreads on foreign currency borrowings (SPREAD1) moved in a positive direction for SPBBB, a negative direction for KOSPI, and then completely disappeared around the 10th quarter. In a similar manner, spreads 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.[7] 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.

[7] See Caballero (2000).

Results of impulse response

(SPREAD FESF) (SPREAD BBB) (KOSPI)



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Progress towards internationalisation: the Korean and Singaporean experiences – comments on Kyungsoo Kim and Young Kyung Suh's paper "Internationalisation of the won" and Luke Goh's paper "Singapore dollar's evolution away from non-internationalisation"

Atchana Waiquamdee[1]

Introduction

Thank you for the invitation to comment on the views shared today by both our Korean and Singaporean colleagues. At first glance, both countries share important similarities – namely, they are relatively small and open economies which are highly dependent on trade. But particular attributes of each country's trade differ remarkably. Korea's relatively large share in international output stems from its sizeable real manufacturing and industrial base. Singapore, on the other hand, relies heavily on trade – imports and exports.

Both countries, however, have opposing views on internationalisation. The Korean stance is one favouring an active approach towards internationalisation. In fact, Kim and Suh (2009) state that "internationalisation of currency may be a strong instrument to cushion the adverse effect of external financial shock and should be considered as one of the top priorities in small open economies like Korea". The Korean paper also states that "currency internationalisation is essential to a small open economy like Korea".

At the opposite end, Singapore's view on this issue has been clear: its long-standing policy of not encouraging internationalisation of the Singapore dollar stems from the Monetary Authority of Singapore's use of the exchange rate as the principal tool of monetary policy. This reflects the view that, for a small open economy with a structure like Singapore's, exchange rates play an important role in determining domestic inflation dynamics.

However, this policy has been revised numerous times to keep it updated and relevant, with greater liberalisation where warranted. The gradual lifting of restrictions, or removal of "speed bumps", ultimately means that there is no longer a non-internationalisation policy per se, except for a remaining lending restriction on SGD to non-resident financial institutions.

The opposing views of the two countries – both small and open economies – and their respective policy choices raise numerous questions in terms of policy for countries with similar attributes, such as Thailand. A question that instantly comes to mind is whether a small and open economy with less than fully mature financial markets can have an internationalised currency.

The issue of currency internationalisation for emerging market economies immediately raises a number of important questions. First, assuming that it is indeed possible for a small and open economy to have an internationalised currency, how can we balance the costs and the benefits of internationalisation, particularly given that the benefits are uncertain?

And given this balance, are small and open economies willing to give up controllability of the exchange rate for the sake of the benefits which can be derived from internationalisation?

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Arguably, many of the costs mentioned in Kim and Suh (2009) may be less relevant if that country's currency is well accepted as an internationalised currency. But the road to such an end goal is long and uncertain. During that time, the country may become even more vulnerable to shocks which may arise from global capital flows, giving greater weight to potential costs in the meantime.

And, learning from these experiences, what does this imply for other small and open economies given this complete divergence in views?

Is it possible for a small and open economy to have an internationalised currency?

Feasibility of currency internationalisation

The first question, therefore, is whether it is even possible for small and open economies – with relatively immature financial markets – to have an internationalised currency.

Kim and Suh concede that a country with an international currency should have a large share of world trade and world output. That implies that there should be widespread use of the currency outside the country's borders. Economic size gives a country market power, allowing it to dominate its trade in its own currency, thus forcing foreigners to take on exchange rate risk.

In terms of denomination of exports in local currency, there is a higher likelihood of exports being priced in an exporter's own currency the higher the exporter's share in that industry, and the more differentiated the export products are relative to competing foreign firms' products (ie a lower price elasticity of demand).

In addition, a larger economy is likely to support a larger domestic financial market, which should also be broader, in that it contains a large assortment of financial instruments, and deeper, in that it has well developed secondary markets. This also supports the use of domestic currency in pricing exports, given that the choice of currency as a medium of exchange will depend on the ease of buying, selling and hedging that currency for example, all of which is supported by a large financial market.

A factor related to size is the demand for that country's currency outside its borders, which in turn depends on market confidence and willingness to hold the currency. This is partially determined by the structure of trade – namely, how large a share that country's trade in goods and services has, as well as its financial presence, in international transactions. And, in addition to that country's own transactions, whether or not the volume of transactions denominated in that currency reaches a critical mass sufficient to push down transaction costs to make it competitive with other major currencies is a key factor in determining whether that currency is cost-effective in its use as a third, or vehicle, currency.

Another important aspect is the ability of the currency to serve as a store of value for non-residents. That ability depends on the confidence of non-residents in the value of the currency, namely its ability to keep its value in terms of other currencies and in terms of purchasing power over goods. This, in turn, is determined by a track record of low exchange rate volatility and a history of low and credible inflation, which themselves are supported by a credible central bank.

Finally, financial markets should be open, deep and broad. This implies institutional support for internationalisation, such that there are no institutional restrictions on foreign exchange trading and financing, while the breadth and depth of the financial markets may come about with a larger economy, as mentioned above.

Table 1

Country share of world trade and world output

Relative size of economy and financial markets compared to the United States

	GDP	Bank credit/ GDP	Non-bank credit/ GDP	Stock capitalisa-tion/GDP	Bond capitalisa-tion/GDP	Trade/ GDP (%)	Capital flows/ GDP (%)
United States	100	100	100	100	100	23	24
United Kingdom	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	…	…	30	19	65	13
Singapore	1	230	57	113	37	345	116
Hong Kong SAR	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: World Bank Financial Development Indicators; IMF, *IFS*.

Note: Table taken from Kim and Suh (2009).

Table 1 shows the relative size of regional economies compared to countries with major internationalised currencies. It also shows the relative size of financial markets and each country's trade and financial openness. We see that countries in the region generally satisfy only some of these conditions relative to developed countries.

Desirability of an internationalised currency: benefits and costs

The question that arises is how Asian economies rate in practice, in terms of the feasibility of internationalising their currencies. One important condition for an international currency to be well accepted is that it needs to be more competitive than existing international currencies, in terms of transaction costs in its use as a vehicle currency. In addition to volume of transactions, this also depends on the level of financial development, which rules out many regional economies with less than fully mature financial markets.

Other factors that increase a country's market power include the exporter's share in that industry and the degree to which the export products are differentiated, relative to competing foreign firms' products (ie a lower price elasticity of demand). If the above conditions hold, there is a higher likelihood that exports can be priced in an exporter's own currency.

In addition, a country that plans to pursue internationalisation needs to find a balance between the potential future benefits of internationalisation (and free capital flows) and current risks. These include risks to stability, given the level of financial development at present. At the same time, financial market openness entails a lifting of restrictions on capital account transactions and deregulation of the domestic financial system.

This also depends on the extent to which the country needs to maintain influence over the exchange rate, given the exchange rate's role in cushioning against external shocks. Such influence may range from minimising volatility to, as in the case of Singapore, having an exchange rate target. Moving towards internationalisation may lead to increased exchange rate volatility – not to mention increased speculation on the currency – complicating management of monetary policy. And in practice, exchange rates still play an important monetary policy role, particularly in emerging markets.

Assuming that it is feasible to pursue the path towards internationalisation, what then are the benefits of having an international currency? Kim and Suh lay out four important benefits.

The first benefit arises from the elimination of exchange rate risk in external transactions, ie the ability of exporters to denominate their exports of goods and services in local currency. The ability to do so will depend on factors mentioned above. But even if the internationalised currency catches on, exchange rate risk will only really be eliminated in the short term, in the form of the short-term elimination of "transaction exposure" to foreign exchange risk.

Over time, however, if the denomination currency is volatile and leads to exchange rate risk for the importing country, new transactions can and will always be repriced to reflect actual costs, including costs arising from exchange rate volatility, even if priced in domestic currency.

The second important benefit is the country's ability to access international financial markets without exchange rate risk – in other words, to issue debt denominated in domestic currency. This means overcoming "original sin", the inability to borrow externally in domestic currency.

One possible downside arises if exposure to foreign capital flows leads to increased vulnerabilities to financial shocks from abroad. This, in part, depends on how confident investors remain about the country's prospects, and how fickle capital flows can be. Such downsides mean that the benefits of an internationalised currency may be less apparent in the case of emerging market economies.

A third benefit implied by the paper comes from the reduced incidence and severity of economic volatility arising from external shocks. Recent Korean experience has shown a withdrawal of foreign currency financing from emerging markets, which has led to heavy pressure on exchange rates and asset prices in those markets. This was particularly significant in Korea given its heavy reliance on external transactions. The incidence and severity of such shocks would undoubtedly be mitigated if debt could be issued in local currency, for instance.

Before full internationalisation takes place, however, incidents of this kind are likely to result in excessive volatility in the currency, which in turn places pressure on exchange rates and asset prices. This can be seen in Table 2, which shows that volatility in the Korean won has recently been high compared to the rest of the region.

Table 2

Actual volatility (%)

(compared to USD)

Currency	Jan–Dec 2007	Jan–Dec 2008	Jan–Feb 2009
KRW	4.39	20.05	23.53
PHP	6.35	8.02	9.06
INR	4.81	8.16	10.04
JPY	8.78	14.85	16.63
MYR	4.17	6.32	7.62
THB	3.89	5.10	4.27
SGD	3.39	6.78	9.74
IDR	6.14	9.09	18.39
TWD	2.25	4.84	5.69
CNY	1.53	2.15	1.59

Sources: Bloomberg; Bank of Thailand calculations.

Finally, a fourth benefit identified by the paper is the reduced reliance on the central bank in its potential role as lender of last resort, as internationalisation eliminates the likelihood of a financial crisis caused by a sudden stop of foreign capital flows or external drains (capital flight, given risk aversion), which could otherwise place extraordinary demands on a central bank's funds. That would require massive amounts of foreign exchange reserves. Whether or not internationalisation would lead to a reduction in reserve holding in practice would depend on whether central banks are able to justify holding smaller reserves, given that their prime motive for holding massive amounts of reserves is caution and prudence.

On the other hand, an internationalised currency may mean costs for that currency's domestic economy. The most prominent cost of internationalising a currency is restrictions on the ability to conduct an independent domestic monetary policy, as monetary policy becomes less effective in controlling the exchange rate. This has implications for domestic activity and inflation, particularly in countries where the exchange rate plays a major role in determining inflation dynamics, such as Singapore.

Another cost arises from vulnerabilities to financial shocks from abroad, particularly for countries undergoing financial liberalisation. In this regard, Kim and Suh (2009) note that "in its early stages, internationalisation of the won may hinder rather than help the stabilisation of the domestic capital market". This risk is particularly relevant for emerging market economies with immature capital markets, which may face enormous risks in the process leading up to internationalisation of their currency by being fully exposed to global capital flows.

A country whose currency is internationalised may be at greater risk from the whims of foreign capital, thus exposing domestic investors to harm. For example, a sudden deleveraging (such as a systemic sudden stop) of foreign capital can cause drastic fluctuations in domestic asset prices.

This also applies to countries whose financial markets have been, or are being, liberalised. Recent crises that led to severe stress in financial markets in major currencies also resulted in sharp withdrawals of foreign currency financing from emerging markets and exerted heavy

pressure on exchange rates and asset prices in those markets. Korea has been one of the most affected emerging market economies given its heavy reliance on external transactions.

An internationalised currency's role as a reserve currency for other countries may also conflict with the desired exchange rate path for that currency. In particular, where the currency is used as a point of reference for other countries' exchange rates, other countries intervening in the reference currency usually take an opposite position to that of the domestic central bank (which is trying to prevent excessive appreciation of its currency).

Finally, another downside stems from concerns that lending to non-residents can lead to potential crowding-out of domestic borrowers, particularly during phases such as the current financial turmoil, which has placed strains on financial market liquidity.

The Korean paper raises an important question about the appropriate strategy towards internationalisation. It mentions that "it is important for developing countries to find a possible strategy for pursuing currency internationalisation that maximises the advantages while minimising the risks". But the underlying question is whether it is actually possible to actively pursue currency internationalisation, or whether countries can only encourage internationalisation.

For example, this distinction is clearly demonstrated in the difference between the Singaporean and Korean cases. In the case of Singapore, demand for the domestic currency internationally is a result of financial liberalisation and development, even though there was a clear policy of non-internationalisation. On the other hand, the Korean paper suggests that Korean authorities are making internationalisation of the won an explicit policy goal.

A regional approach to currency internationalisation?

The Korean paper raises another interesting issue: given that the Korean won may not be easily internationalised in the short term, would it be possible to encourage regional use of the won – what the paper calls "regionalisation"? It is unclear whether financial markets would support a "regionalised" currency, given that such a currency would no doubt imply international linkages in any case. As a result, those linkages with international financial markets would place such a "regionalised currency" – the Korean won in this case – in competition with other established, major international currencies such as the US dollar and the euro, in terms of transaction costs and their role as a third (vehicle) currency. Even within the region, players would continue to use the US dollar, for example, if it was the more competitive currency.

This may reflect the fact that the world can have only a limited number of international currencies, given the critical mass required for transaction costs to be lowered to such an extent as to be extremely competitive. This implies that pursuing currency internationalisation is unlikely to be a strategy for all countries. Moreover, it may not be successful if a small open economy decides to go ahead with it alone, given that market forces will tend to favour established major currencies.

As an extension, a more successful option may be for the region to follow the path towards regional economic monetary integration in order to establish a regional currency. While this would not guarantee that the regional currency would be used internationally, it would draw upon many of the benefits of internationalisation mentioned above, such as helping to reduce foreign exchange volatility and costs of transactions within the region.

Reconciling the Singaporean and Korean views

How, then, do we reconcile the two countries' opposing views? Both countries, having the characteristics of small open economies, may need to minimise risks arising from the exchange rate in order to facilitate international trade. At the same time, they should be able to reap some of the benefits that currency internationalisation should bring them, such as access to international financial markets in their own currency.

With regard to minimising exchange rate risks, the main difference is the way of minimising those risks, whether it is via control over the exchange rate, as in the case of Singapore, or by reducing the effect of exchange rate fluctuations on trade, as in the case of moving towards an internationalised currency.

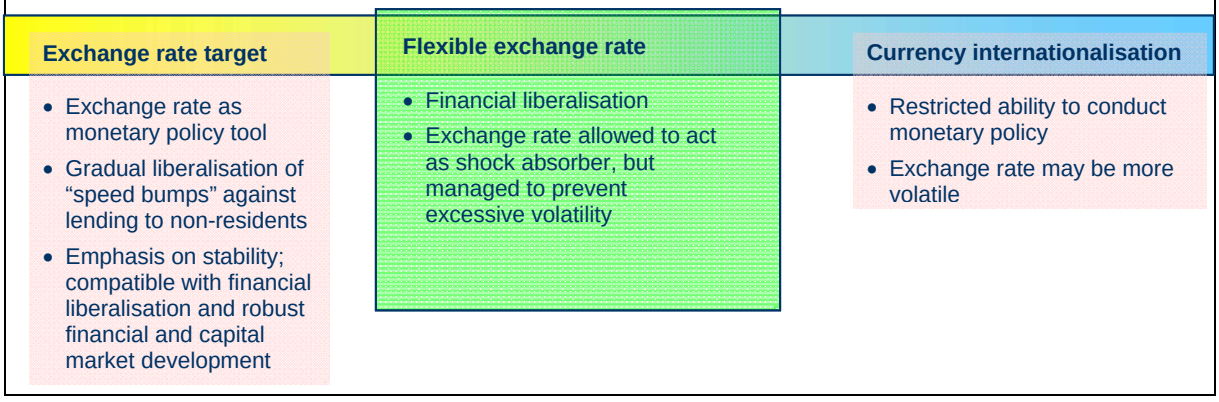
At the same time, some flexibility may need to be accorded to exchange rates in order for them to play a role as a shock absorber for the economy.

Small open economies inevitably experience shocks of a real or nominal nature every now and then. The sources of these shocks can range from commodity prices to foreign capital markets and erratic domestic factors. In modern economies where the degree of trade and financial openness are continually increasing, the flexible exchange rate is believed to be an effective absorber of the unfavourable consequences of idiosyncratic shocks, as well as real shocks such as terms of trade shocks, productivity shocks and real interest rate shocks.

Internationalised currencies, on the other hand, rely on the widespread use of the currency to minimise exchange rate risks but allow exchange rates to be excessively volatile, given that exchange rate controllability is sacrificed for the currency's international role. The assumption is that the internationalised currency allows the country to command payment in domestic currency, hence cutting out the exchange rate entirely.

Box 1

Reconciling the Korean and Singaporean views



A possibility which reconciles both views, as reflected in the box above, is one where the exchange rate is allowed to move somewhat flexibly to act as a shock absorber but is managed by the central bank to prevent excessive volatility (while not resisting the trend). However, that arrangement may imply that all-out internationalisation may not be an option.

In order to reap some of the benefits of an international currency, however, increased financial liberalisation may allow improved access to international financial markets, without going to full currency internationalisation. As in the case of Singapore, financial liberalisation can be gradual, with the gradual lifting of restrictions against lending to non-residents, or the gradual removal of so-called "speed bumps", for instance. At the same time, there needs to

be an emphasis on stability, particularly with regard to financial liberalisation and ensuring robust financial and capital market development.

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Internationalisation of currency in East Asia: implications for regional monetary and financial cooperation[1]

Yung Chul Park[2] and Kwanho Shin[3]

1. Introduction

A number of East Asian economies including China have been exploring the possibility of internationalising their currencies in recent years. Although widely used in the economics literature, terms such as international currency and internationalised currency are not well defined. As a first approximation, it could be argued that full convertibility covering both current and capital account transactions would qualify a currency as a global medium of exchange, unit of account, and store of value.

In East Asia, there are several fully convertible currencies such as the yen, the Hong Kong dollar, the Singapore dollar and other regional currencies of varying degrees of convertibility. But even the Japanese yen, not to mention other convertible currencies, remains a distant third key international currency, although Japan is the second largest economy in the world and has taken steps to reform its policy and institutions in order to facilitate internationalisation of the yen since the late 1990s. If Japan's experiences are any guide, one wonders why small emerging economies would entertain the idea of making their currencies international. Yet, encouraged by the successful internationalisation of the Australian dollar, several East Asian economies are attempting to replicate a similar experience.

With regard to China, a case could be made for elevating the status of the renminbi commensurate with its growing economic clout in the global economy. For other emerging economies, their motives are not clear, but the intensification of competition to host a regional financial centre in East Asia may have spurred them to consider pursuing internationalisation. The purpose of this paper is to delineate some of the issues related to currency internationalisation in East Asia.

More specifically, this paper will define currency internationalisation, that is, identify some of the qualifications for currency internationalisation, such as capital account liberalisation, in Section 2. In Section 3, the benefits and costs of currency internationalisation are analysed, and its effects, particularly those of capital account liberalisation, are described in Section 4. Section 5 provides an examination of the implications of currency internationalisation in East Asia for monetary and financial integration led by the ASEAN+3 countries. The concluding remarks are presented in the final section.

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2. Prerequisites or qualifications for an international currency

A national currency may, in general, be regarded as "internationalised" if it plays a role of money outside the country where it is issued. An international currency is used in invoicing exports and imports of goods and services and in denominating financial instruments traded in global financial markets. Obviously, this is not a workable definition. For an operational definition, it may be useful to identify the qualifications for an international currency.

In general, money has three primary functions: as a medium of exchange, as a unit of account, and as a store of value. Of these, its function as a medium of exchange is the feature that distinguishes money from other financial assets. In most cases, these three functions of money are restricted to the country where it is issued. Internationalised money therefore refers to one that performs these functions outside the country of its issuance, in particular as an international medium of exchange. In order for money to be internationally used for the settlement of international transactions, one of the necessary conditions is that there are little or no restrictions on foreigners' access to domestic financial markets. Other conditions or qualifications, which are mainly associated with market fundamentals, also need to be satisfied for it to be actually used by foreigners.

In this regard, it is important to distinguish between capital account convertibility and currency internationalisation. Capital account convertibility is certainly one of the preconditions, but it does not automatically make a local currency an international medium of exchange. It implies that there is no barrier to cross-border financial transactions conducted at market-determined exchange rates. Under certain circumstances, currency internationalisation could be achieved without complete capital account convertibility. For example, some restrictions on domestic investors' investments in foreign assets could be retained in countries with an internationalised currency (Kenen (2009)).

Other qualifications for an international currency may be gleaned from the features of the existing key international currencies such as the US dollar and the euro, which serve as both a global medium for transactions and are held as part of foreign exchange reserves. The two currencies play dominant roles as reserve and trade currencies. Together, they accounted for 50–70% of the denomination of exports and imports of goods and services, even for a third country such as Japan or Australia (Table 1), 90% of international reserves held by the world's central banks (Table 2), and 80% of the denomination of international financial instruments (Table 3), although the shares of the US dollar and the euro in global GDP amounted to 25.8% and 30.4%, respectively. The two key currencies are fully convertible because they are widely used in the settlement of international transactions of goods and services and financial instruments. Both the US dollar and the euro are independently floating, but internationalisation of a currency is not necessarily predicated on the type of foreign exchange rate regime. In fact, as the Hong Kong SAR case illustrates, it appears that different exchange rate regimes are compatible with international currencies, although a variety of intermediate regimes may run into conflict with internationalisation as they often entail capital controls.

The two key currencies share some economic features which are essential for the internationalisation of a currency. First, the volume of trade in goods, services and financial assets originating in the issuing economy is large and, second, the issuer has the bargaining power to denominate trade in its own currency. These qualifications then suggest that developed countries would have a better chance of internationalising their currencies because they tend to produce more differentiated goods, thereby giving a greater market power to the producers. A well developed financial market with a large variety of risk hedging instruments is also advantageous for currency internationalisation. Finally, an international currency should be able to gain the confidence of other countries in its value if it is to be successfully used as a store of value. In this regard, it is important that the reserve currency country has a good track record of price stability.

National currencies may be fully convertible and freely floating, but unless they are widely used in international transactions they do not function as a global unit of exchange. This means that, above all, the degree of a currency's actual usage is the most critical criterion for qualifying it as an international currency. The extent of internationalisation of a currency is often measured by its share in the denomination of international trade in goods, services and financial assets, and its holding of foreign exchange reserves. When this measure is applied, even the Japanese yen does not qualify as a fully fledged international currency (Tables 1–3).

In order to illustrate the underlying market forces that facilitate the internationalisation of a currency, this section reviews the literature on how the choice of an invoicing currency is determined. A general feature of currency internationalisation is that traded goods and services are likely to be invoiced in the exporter's currency, enabling the exporters to avoid the exchange rate risk. While importing firms also prefer to invoice in their own currency, imports tend to constitute a lower proportion of their spending than exporters' sales are for exporting firms' revenue (Page (1977)). Importers can also adjust to exchange rate fluctuations by changing the domestic prices of their products, whereas exporters cannot easily do so as a large portion of their costs – such as labour costs – are usually fixed in exporters' currencies (Krugman (1984)). Additionally, the bargaining power of exporting firms is likely to be greater, as they enjoy either the first-mover advantage or the monopoly power (McKinnon (1979), Viaene and de Vries (1992)). All these considerations point to the dominance of the exporter's currency, ie producer currency pricing (PCP), in trade among developed countries. On the empirical front, Grassman (1976), among others, found that, on the basis of the Swedish data, traded goods and services were more frequently invoiced in the exporter's currency. This is also confirmed by Table 1: for example, in 2005, while 38% of Japan's exports were denominated in the yen, only 23.1% of its imports were yen-denominated.

The choice is also influenced by the product structure of trade. For example, PCP is more likely to prevail if traded goods and services are more differentiated (Tavlas (1996)). This is because exporting firms face demand uncertainty. If the exporter's currency is used as an invoice currency, importers face changes in payment prices as the exchange rate fluctuates, to which they respond by changing their demand. Preference for PCP would then depend on the relative size of the two risks: the exchange rate risk and the demand uncertainty. The degree of the demand uncertainty crucially hinges on the competitiveness of the market: the more competitive the market, the higher the demand uncertainty, as importers have greater room to switch between exporters (McKinnon (1979)). If an exporter enjoys monopoly power, changes in the price of its product will result in lower fluctuations in demand. In an extreme case, if the demand curve is vertical, changes in the product price will not affect the demand at all. Therefore, if exporters produce more differentiated goods, they are subject to reduced demand uncertainty, hence their preference to fix the price, ie by choosing PCP.[4] Many studies have found that, in trade between a developed and a less developed country, the former's currency is more likely to be used as an invoice currency. This finding is consistent with the fact that developed countries produce and export relatively more differentiated goods and services, reducing their exposure to demand uncertainty.[5] The dominance of a developed country's currency in trade invoicing can also be attributed to lower valuation losses associated with the stability of developed countries (Magee and Rao (1980)).

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[4] There is also a growing trend towards using the importer's currency for invoicing trade or relying more on local currency pricing (LCP). Invoicing in the importer's currency can enable exporters to minimise the demand uncertainty arising from the increased market competitiveness caused by the globalisation of the world economy.

[5] Developed countries produce more differentiated goods and services with monopoly power because they employ more advanced production technologies.

Finally, more homogeneous goods such as oil and other primary commodities are likely to be invoiced in very few key currencies. If they are invoiced in several exporters' or importers' currencies, arbitrage opportunities open up widely across different currencies due to fluctuations in the exchange rates. In order to eliminate such opportunities, the goods are likely to be invoiced in the same vehicle currency (McKinnon (1979)). Furthermore, it is easier to compare prices if they are quoted in the same vehicle currency on organised exchanges (Goldberg and Tille (2008)).

3. The benefits and costs of currency internationalisation

The preceding discussion suggests that the global economy may not be able to accommodate a large number of key international currencies. This is especially so as the idea of network externalities, ie whereby the value of a good or service to a user depends on how many others use it as well, also applies to currency usage. If network externalities prevail, a particular currency is more likely to dominate internationally as there are strong incentives for others to conform to the choice of the marketplace.[6] Why, then, would small emerging economies consider currency internationalisation, particularly if they have to endure the pains and costs of the extensive structural and institutional reforms dictated by internationalisation? Obviously, there are benefits to having an international currency. But there must also be costs.

3.1 The benefits of currency internationalisation

The first benefit of currency internationalisation is that domestic agents engaged in foreign trade may be able to reduce foreign exchange rate risk to the extent that their exports and imports are invoiced in their own currencies. Domestic borrowers (financial institutions and firms) could also borrow in their own currencies, thereby avoiding a currency mismatch in their balance sheets. The 1997–98 Asian financial crisis clearly demonstrated that macroeconomic shocks could be amplified by balance sheet aggravation in the banking sector.[7] It has been argued that, owing to the development of derivative products, such benefit – of reducing foreign exchange risk – is now lower than in the past. However, the recent exchange rate risk management of shipbuilders in Korea shows that there is a limit to which the risk can be hedged through the use of derivatives instruments as it could engender a system risk for the economy as a whole. Since it takes a long period of time to construct ships, a typical shipbuilding order designates the delivery of payment, mostly in US dollars, at a future date, often more than a year later. In order to avoid the exchange rate risk, shipbuilding companies usually take a short position in the forward market. Banks are usually the counterparty of the forward market: they take a long position while at the same time borrowing the same amount of US dollars of the same maturity so as to square their foreign currency position. This arrangement could trigger a liquidity crunch if some of the shipbuilding orders are not fulfilled because the ship buyers are unable to pay. On the delivery date, shipbuilding companies are then forced to purchase US dollars in the spot market to clear the position. This increase in the demand for US dollars leads to a sharp

[6] A counterargument against network externality, raised by Eichengreen (2005), is that competition for the affections of investors, particularly for a reserve currency, may act in favour of multiple international currencies.

[7] In order to mitigate the currency mismatch problem, financial regulatory authorities in East Asia imposed a number or restrictions on asset and liability management involving foreign currency borrowing and lending after the 1997–98 financial crisis. They have not been very effective in guarding against the incidence of currency mismatching (Park (2009)).

depreciation of the local currency, a deterioration of the shipbuilders' balance sheets and a piling-up of losses incurred by the shipbuilders. The preceding example shows that the potential benefit could be great if currency internationalisation is able to mitigate the currency mismatch.

Second, countries with major international currencies also reap the benefits of collecting seigniorage revenues from foreign holdings of their currencies. Recently, Chinn and Frankel (2007), by using shares of the reserve holdings of the world's central banks as a proxy for foreign holdings of internationalised currencies, found that the shares are determined by the economic size of the country, the inflation rate, the exchange rate variability, and the size of the relevant financial centre (as measured by the turnover in its foreign exchange market). Furthermore, they found that the relationship between currency shares and their determinants is not linear, which supports network externality theories. As far as emerging economies are concerned, since they are less advanced in terms of those determinants, such benefit is likely to be insignificant.

Third, domestic financial institutions may gain an edge over their external competitors in dealing in their own currency. It is anticipated that, once a number of financial assets denominated in their own currencies are issued and freely exchanged for foreign currencies, more opportunities in global financial intermediation will open up for domestic financial institutions. For this reason, some policymakers consider currency utilisation as a way of developing financial institutions.[8]

Finally, some emerging economies may find it necessary to internationalise their currencies in order to successfully construct a regional financial centre on their soil. For example, Korea has been pursuing currency internationalisation in the expectation of hosting an international financial hub. This strategy may work, but currency internationalisation does not necessarily lead to the establishment of a financial centre within the boundaries of the issuance country. For instance, in the case of the euro, a fully developed international financial centre is located neither in Frankfurt nor in Paris. Instead, London deals with a large share of cross-border financial transactions in euros.

Singapore's well known non-internationalisation policy also illustrates the fact that currency internationalisation is not a necessary condition for the development of a financial centre. Since the late 1960s, the Singapore government has provided special regulatory and tax treatment for foreign commercial banks to promote offshore foreign currency deposits. Singapore also eliminated all barriers to bona fide capital account transactions and raised the institutional environment to international best practices. Such policy reforms have contributed to the establishment of the Asian dollar market (ADM) along the lines of the eurodollar market. The Singapore government, however, perceived the size of the Singapore economy to be too small compared to the rapidly growing volume of foreign currency deposits. Since Singapore used the exchange rate as a benchmark policy instrument, its government was especially concerned about the possibility of speculative attacks on the Singapore dollar. It believed that restricting the international use of the domestic currency could essentially protect the Singapore dollar from speculative attacks (Chow (2008)).

The key feature of the non-internationalisation policy adopted by the Singapore government was restricting asset side banking transactions of cross-border lending of Singapore dollars to non-residents or to residents where Singapore dollars were to be used outside Singapore. This non-internationalisation policy continued until the late 1990s and since then, the policy has been liberalised in stages. The only remaining legacy of the non-internationalisation policy is the prohibition of extending Singapore dollar credit facilities to speculative activities,

[8] See, for example, IMF (2006), for an illustration of the aims of won internationalisation pursued by Korea's policymakers as a way of financial sector development and expansion of cross-border financial transactions.

and restrictions on outflows of Singapore dollar accounts above a certain level (IMF (2001)). It is not clear whether the non-internationalisation policy was effectively performed in the past to prevent speculative attacks on the currency because the risk of speculative attacks has not substantially increased since the Singapore government successfully removed most of the restrictions related to the non-internationalisation policy.

3.2 The costs of currency internationalisation

Emerging economies embarking on currency internationalisation must be prepared to bear the costs of allowing their currencies to be freely traded in foreign exchange markets. First of all, they need to lift restrictions on capital account transactions and also deregulate the domestic financial system. In view of the fact that all advanced economies have a fully liberalised capital account, emerging market economies also need to manage capital account liberalisation, at least in a gradual manner over time. If capital account liberalisation has almost been attained, it would be important to isolate the marginal benefits and costs of currency internationalisation in addition to those already attained by capital account liberalisation. In that case, the additional benefits and costs associated with currency internationalisation may not be large. However, if capital account liberalisation has not been attained, the benefits and costs of currency internationalisation, as they include those of capital account liberalisation, could be substantial. In theory, capital account liberalisation could provide substantial benefits because it enhances the efficiency of capital reallocation, deepens capital markets and creates more opportunities to smooth consumption over time and share consumption risk. However, recent empirical studies have not found any discernible benefits of capital account liberalisation: Kose et al (2006), among others, find little robust evidence of the growth benefits of capital account liberalisation. Instead, a number of studies point out the difficulty of managing macroeconomic policies in response to sharp capital flow reversals.

Second, since currency internationalisation predisposes the emergence of offshore currency markets, emerging economies may have to endure an increase in their exchange rate volatility. For example, the exchange rate would move in response to changes in the foreign demand for the domestic currency resulting from foreign shocks not associated with domestic economic conditions. However, the opposite could be the case: by enlarging the foreign exchange market, currency internationalisation could actually contribute to increased exchange rate stability. If the foreign exchange market becomes deeper, the exchange rate would not be significantly influenced by any single party's transaction. More diversified sources would stabilise the aggregate demand and supply of domestic currencies in the foreign exchange market. Whether currency internationalisation would lead to increased exchange rate volatility is therefore an empirical question.

Third, some emerging economies may become more vulnerable to the currency crisis if foreign investors widely hold domestic currency financial instruments. If foreign investors are hit by a liquidity squeeze, they may be forced to sell domestic currency assets, putting pressure on the exchange rate to depreciate. Since the depreciation of the exchange rate lowers the value of domestic assets, it reinforces the incentive to sell more, further contributing to depreciation. This is already a familiar story in Korea: following the onset of the subprime mortgage crisis, foreigners have liquidated a large share of their holdings of Korean stocks, lowering the foreign share from over 45% to 26%. Currency internationalisation can result in providing speculators with more instruments to be used in speculative attacks on the currency. For example, after foreign investors intentionally raise funds by issuing financial debts, or take a short position denominated in the domestic currency, they can sell the domestic currency in the foreign exchange market to drive the exchange rate down. If the exchange rate further depreciates, they can earn huge profits from the lowered value of the debt.

Finally, an additional source of money demand by foreigners may complicate the monetary authorities' management of monetary policy. For example, if the monetary authorities change the money supply without taking into consideration the external demand, they may not able to set the intended target level of money supply in the domestic economy. This was one of the most important concerns of the monetary authorities of both Germany and Japan when they made their decisions about internationalising their currencies (Frankel (1984), Talvas (1996)). One possible counterargument to this problem points out that monetary policy's main operating target is the interest rate, not the money stock, if inflation targeting is adopted as a framework of monetary policy operating procedures. In this framework, as long as the monetary authorities maintain the target interest rate, since the money stock is endogenously determined, the additional source of money demand may not create too many problems for the monetary authorities if they automatically adjust the money supply.

In fact, the difficulty of conducting autonomous or independent monetary policy is not due to currency internationalisation per se, but more generally to capital account liberalisation. Since Mundell's seminal paper (1963), it is well known that if the capital account is fully liberalised, it is impossible to preserve both autonomous monetary policy and exchange rate stability. Most emerging economies have chosen to preserve autonomous monetary policy over exchange rate stability by adopting free floating. There is still an issue over whether the floating exchange rate can be sustained or, even if it is, whether it actually guarantees a fully autonomous monetary policy.

When the benefits are balanced against the costs of internationalisation, it is not clear whether a strong case can be made for having an international currency in emerging economies. Why, then, are many of the emerging economies in East Asia attracted to the idea of currency internationalisation. The policy authorities of those countries have been managing inflation targeting as a framework of monetary policy since the 1999 Asian financial crisis. In general, inflation targeting presupposes the decontrol of capital account transactions and the adoption of free floating. And they may realise the inevitability of opening up their financial markets and intermediation industries to foreign competition in the not too distant future. At the same time, developing onshore international financial markets, which requires currency internationalisation, may help to garner greater public support for capital account liberalisation.

Although they are important prerequisites, currency convertibility on both the current and the capital account and free floating do not guarantee the internationalisation of a currency. In order to make a currency international, as noted above, the currency in question must be widely used internationally. Since all East Asian emerging economies, except for China, command a small share of global trade in goods and services, the most effective way of promoting an extensive international use of their currencies would be by playing a more important role in international financial intermediation. If this is indeed what they are striving for, the idea of hosting a regional financial centre with currency internationalisation may merit further discussion. In this respect, it should be emphasised that the East Asian emerging economies vying for a major role in East Asia's regional financial markets need to identify the structural and institutional reforms that must be carried out and set a timetable for their implementation.

4. The effects of capital account liberalisation on growth, stability and liquidity provision

As discussed in the preceding section, one of the necessary conditions for the internationalisation of an insular currency is the liberalisation of capital account transactions, that is, making it fully usable for the settlement of international transactions. In the financial regime of a country with an international currency, it is expected that the deregulation of

cross-border investments would provide a level playing field for both foreign and domestic market participants. In such a regime, foreign investors are not subject to any restrictions on buying and selling domestic financial instruments in both domestic and offshore markets. Foreign borrowers are also allowed to issue bonds and other financial instruments denominated in the domestic currency in both domestic and offshore markets and to market them to non-resident investors. Likewise, domestic residents are accorded the same opportunities to participate in foreign financial markets both as lenders and borrowers.

Capital account liberalisation is often the most difficult and, invariably, the last stage of financial market opening in emerging economies. Since its effects on the economy remain uncertain, emerging economies would need to weigh up the benefits and costs of capital account deregulation before embarking on currency internationalisation. There is a vast literature on the benefits and costs of financial market opening. This section briefly reviews its effects on economic growth, financial market stability, and reserve holdings for self-insurance in emerging markets as a first step towards assessing the rationale of currency internationalisation in East Asia's emerging economies.

4.1 Growth benefits

The standard argument with regard to economic growth is that financial globalisation leads to capital flows from advanced economies with low rates of return on capital to emerging and developing economies with higher returns, thereby complementing limited domestic savings and lowering the cost of capital to augment domestic investment in the latter. Certain types of capital inflows, such as foreign direct investment (FDI), bring with them new technologies and help to improve the managerial and organisational capacity of the host countries. The existing literature presents little robust evidence on the growth benefit of financial opening. Kose et al (2006) argue that there are certain threshold conditions that must be met by emerging economies in order to reap the growth benefits from financial market opening such as developed financial markets, high quality of institutions and governance, and trade integration. The authors warn that premature opening of the capital account in the absence of such supporting conditions could make emerging economies more vulnerable to external shocks, such as sudden stops of capital inflows.

At this stage, few East Asian emerging economies, excluding the five latecomers of ASEAN, are suffering from a lack of domestic saving. For more than a decade since the 1997–98 crisis, they have been exporting capital by running sizeable amounts of current account surpluses. Their concern has been the lack of investment demand. And the current trend is not likely to be reversed any time soon. For this reason, the policymakers of East Asian emerging economies are not likely to have the growth objective high on their agenda for currency internationalisation.

4.2 Financial stability

In contrast, however, there is mounting evidence that increasing capital account liberalisation has increased capital flow volatility, posing serious impediments to financial stability (Stiglitz (2002), Park (2006)). Since the start of the 2007 crisis, capital flows in many East Asian economies with fully and partially open capital accounts have become more unstable than before, causing a high degree of fluctuations in stock prices and exchange rates. Indeed, capital account liberalisation has presented serious challenges for stabilising domestic financial markets in emerging economies. This challenge has been compounded by the problem of size inconsistency.

To large foreign private and institutional investors operating out of East Asia's regional financial markets, their investments in an individual emerging economy often account for a very small share of their total global investments. But given the relatively small size of local financial markets, their investments in any country can be large, beyond its absorptive

capacity, and can therefore easily dictate movements of financial prices, including the exchange rate. When global financial markets are as unstable as they have been in recent years, global investors continuously reappraise the country risks of their investments and adjust their regional and country exposure. When they decide to reduce their regional exposure to, for example, East Asia, they often sell off their holdings of financial instruments of those countries without discriminating between economic fundamentals and credit ratings of different countries and securities. Their withdrawal from the region may comprise small adjustments of their portfolios, but it could have a large impact on those small economies' domestic financial markets, causing unbearably large changes in their exchange rates and domestic asset prices.

4.3 International reserve holdings

Since the 1997–98 Asian financial crisis, many East Asian countries have managed to generate surpluses on their current accounts, the bulk of which have been added to their foreign exchange reserves. They have done so for a number of reasons, but mostly for self-insurance against future crises. Before the 2007 crisis, these holdings were viewed as excessive, costly, and posing serious impediments to the resolution of global imbalances, but with the deepening of the crisis, it is no longer evident whether East Asia's emerging economies, except for China, hold enough reserves to withstand the global liquidity squeeze brought about by the global economic crisis.

In theory, countries with internationalised currencies that have adopted free floating would not need to hold as much reserves as countries with insular currencies. This is because they could, to a limited extent, use their own currencies to substitute for dollar liquidity insofar as their currencies are good substitutes for reserve currencies such as the US dollar and the euro. Having the ability to borrow in one's own currency is no small advantage as it helps to avoid committing the "original sin".

Indeed, countries with internationalised currencies such as the United Kingdom, members of the EM, Canada and Australia hold very small amounts of foreign exchange reserves, although there are exceptions, such as Japan, which has accumulated a large amount of reserves, even though the yen is much more internationalised than the Australian dollar. All Anglo-Saxon countries whose currencies are internationalised hold small amounts of reserves and have been borrowing externally to finance their persistent current account deficits. For instance, Australia's total reserves amounted to little over 3% of GDP at the end of 2008. Australia is one country which appears, on the surface at least, to have reaped the most from currency internationalisation over the past decade. It has consistently run a current account deficit in its recent history which has been financed by external borrowing, a feat that few emerging economies can expect to replicate.

But to what extent has currency internationalisation contributed to the sustainability of Australia's external financing for so long? There is no reason to believe that foreign lenders and investors have been willing to lend so much to Australia for so long simply because its currency has been international. Since currency internationalisation has not necessarily been a de jure process, a more realistic argument is that Australia has been able to accumulate such a large amount of foreign debt because of foreign lenders' favourable assessment of its debt sustainability based on its economic fundamentals. If the Australian experience is any guide, currency internationalisation per se would not necessarily give the country the ability to borrow more than when its currency is insular, although currency internationalisation does facilitate and, other things being equal, even lower the cost of external borrowing, but a country's capacity for external financing is likely to be determined by its economic fundamentals, not by its currency status. This is borne out by Australia's recent decision to enter into a swap agreement with the United States to supplement its reserves. A country's currency could satisfy most of the conditions for an international unit of account, but if there

is little or no global demand for that currency, internationalisation may not help the country to increase its access to international financial markets.

5. Currency internationalisation and regional financial and monetary cooperation and integration

5.1 Currency internationalisation and financial market integration in East Asia

In the years since the 1997–98 Asian financial crisis, as part of their efforts to become more resilient to external shocks, most East Asian countries, including the crisis-hit ones, have voluntarily, or under external pressure, increased the pace and scope of domestic financial reform to liberalise and open their financial markets and also to improve soundness, corporate governance, and risk management at financial institutions. The 1997–98 financial turmoil has also served as a catalyst for a regional movement towards the construction of a region-wide defence system against future crises, as well as financial market and monetary integration. This movement has culminated in the institutionalisation of two regional initiatives: the Chiang Mai Initiative (CMI)[9] and the Asian Bond Market Development Initiative (ABMI).

The ABMI, launched in 2003, was designed to diversify East Asia's bank-based financial system and to create broad and liquid regional bond markets by integrating the domestic markets of individual countries. Park and Wyplosz (2008) argue that one of the preconditions for the construction of efficient Asian bond markets is domestic financial deregulation and market opening. The market liberalisation and opening would increase the supply of investment grade local currency bonds and allow domestic investors to invest in foreign bonds and foreign borrowers to issue bonds denominated in different currencies in East Asia's domestic bond markets. Such market developments would then facilitate cross-border investment in bonds, thereby bringing about deeper integration of regional domestic bond markets.

Currency internationalisation that entails market liberalisation will not, however, be sufficient to foster cross-border investments unless regional financial market infrastructure that includes a regional system of clearing and settlement, regional credit guarantee institutions, hedging facilities, and regional credit rating agencies is also constructed. The infrastructure construction will also need to be accompanied by the harmonisation of legal and regulatory systems, domestic clearing and settlement systems, market practices, rating standards, accounting and auditing practices, and withholding taxes on bond coupon payments across countries in the region.

A number of East Asian countries have been vying to host a regional financial centre. As noted above, currency internationalisation reflects their efforts to improve the competitiveness of exports of financial services. But not all countries with internationalised currencies will succeed in developing a regional financial centre. At most, only a few will succeed. What, then, would be the most efficient selection process? A market-oriented approach, compared to a public sector-oriented one, has the advantage of selecting the most efficient countries for regional financial centres. In an evolutionary market-oriented process, those countries that do well in fostering liberalised and open financial systems with a well-developed financial infrastructure will then emerge as regional trading centres for Asian bonds and other financial instruments. Countries that succeed in internationalising their

[9] It was renamed the Chiang Mai Initiative Multilaterlisation (CMIM) in February 2009.

currencies will enjoy a competitive edge in hosting a regional financial centre, as well as region-wide currency internationalisation.

The market-led approach will certainly help to consolidate the financial markets of individual countries in East Asia, but it will also diversify and strengthen their linkages with global financial markets as it does not discriminate against non-regional borrowers and investors. This global linkage then raises an interesting question of whether the financial opening will produce market forces conducive to deeper regional or global integration of individual East Asian financial markets. It is most likely that both global and regional integration will proceed at the same time.

5.2 Currency internationalisation and monetary integration in East Asia[10]

The CMI and the ABMI are designed to help stabilise the bilateral exchange rates of the member countries. The CMI is meant to provide a collective line of defence against currency market turbulence, and the ABMI aims at reducing currency mismatches and at building deeper and more resilient markets, which should reduce both the frequency and impact of financial disturbances. Yet, neither initiative directly promotes monetary cooperation, in contrast to the Exchange Rate Mechanism (ERM), and, a fortiori, economic and monetary union (EMU). In many ways, the Asian countries have focused on treating the symptoms, not the cause, of currency instability.

Aware of this limitation, the ASEAN+3 countries agreed in 2006 to explore steps to create Regional Currency Units (RCU), similar to the European Currency Unit (ECU). The agreement was preceded by a proposal for the creation of an Asian Currency Unit (ACU). The proposal was developed by the Asian Development Bank and a number of Japanese economists. But the ACU initiative was opposed by several members on the ground that it was premature to discuss plans for monetary union at a time when both the CMI and the ABMI had not left the drawing board. However, the current global crisis is likely to combine with the interest in currency internationalisation to renew the search for a modality and time frame for monetary integration in East Asia.

There are several reasons for East Asia's renewed interest in monetary cooperation, and they are all associated with the lessons to be drawn from the current crisis. One lesson is that it is difficult to determine a level of foreign exchange reserves sufficient for self-insurance, in other words, that is large enough to fend off a crisis. The Greenspan-Guidotti-Fischer (GGF) rule prescribes that the holding of an amount of reserves equal to the country's short-term foreign currency liabilities is flawed as it excludes foreign equity investments, which display rather violent cycles of speculation and liquidation compared to other short-term foreign liabilities. Once a county is perceived to be susceptible to speculative attack, foreign investors may also dump their holdings of long-term bonds, and domestic residents may withdraw their bank deposits and convert them into reserve currency assets. Under these circumstances, no amount of foreign exchange reserves will be enough to keep speculators at bay.[11] Another lesson is that reserve currency countries enjoy exorbitant privileges as suppliers of global liquidity. The spread of the US subprime crisis has resulted in a severe squeeze on the availability of global liquidity denominated in the US

[10] This section draws on Park (2009).

[11] According to Jeanne and Wyplosz (2003), speculators chiefly operate by taking short positions on currencies that they perceive as weak. If they are unsure about their expectations, they will not act when facing a central bank which holds sufficient reserves to sustain a speculative attack, because the outcome can be costly for them. If, however, the market sentiment builds up and expectations are firmly held, speculators can hold short positions of any size. In effect, a speculative attack is a run on the reserves of the central bank; the larger the reserves, the bigger the run. In this situation, equity and bond prices will continue to fall and the exchange rate will continue to depreciate until the central bank runs out of reserves to become insolvent.

dollar and a contraction of international financial intermediation. Although the US Federal Reserve has been busy pumping more dollars into the global financial system, in a global economy gripped with uncertainty and lack of confidence in the market and government, investors all over the world have been taking their dollars back to the United States to invest in US Treasuries, thereby exacerbating global liquidity shortages. Almost 50% of financial assets traded globally are US dollar-denominated, as is the bulk of cross-border financial transactions in East Asia. Since none of the Asian currencies qualifies as a key reserve currency, few countries in the region have been capable of supplementing their dollar shortages by printing more of their own money. The Japanese yen comes close to an internationally traded key currency, but it has not been able to complement the US dollar as a key currency.

Only the central banks of reserve currency countries – the United States and the EMU members – can assume the role of an international lender of last resort. Without the legal backing of a lender of last resort, financial institutions operating out of emerging economies will be at a competitive disadvantage vis-à-vis their counterparts from reserve currency countries. This is because the central banks of non-reserve countries will have to be ready, but may not be able, to supply foreign currency liquidity to domestic banks when they need it. Barring such readiness, domestic financial institutions engaged in international financial intermediation are exposed to dollar liquidity risk, impairing their soundness and stability. This competitive disadvantage will eventually drive local financial institutions out of global financial intermediation.

In order to mitigate the dollar liquidity constraint, it might be argued that emerging economies could take precautionary measures such as securing swap lines from the central banks of a reserve currency country. But swap borrowings entail interest costs. Another option open to those countries is currency internationalisation. As noted above, however, most internationalised currencies are hardly good substitutes for reserve currencies, especially in a crisis situation.

Although it is true that financial crises are not a daily event, they definitely occur periodically, as bubbles, excess, and calamity are part of the package of global finance. From that point of view, creating a global lender of last resort is high on the agenda for international financial reform. However, if past experience is any guide, the ongoing debate on international financial reform is unlikely to resolve the issue of the global lender of last resort and, hence, there will not be a level playing field where financial institutions from emerging economies can compete against those from reserve currency countries. In order to overcome this disadvantage, East Asia's emerging economies may consider joining either the US dollar bloc or the EMU, but this option is hardly realistic. A more practical and rational approach would be to engage in the creation of a monetary union among ASEAN+3 members. The present crisis will provide strong incentives for laying the foundation for a regional monetary union in East Asia. Some East Asian countries interested in internationalising their currencies may be more receptive to the idea of participating in a monetary union. But then the process of adopting a single currency is so arduous, as evidenced by the European experience, that any interest they may have in forming a monetary union may fade away as the global economy breaks out of the crisis.

6. Concluding remarks

If a national currency is used globally as a unit of account, a medium of exchange and a store of value without any restrictions other than those imposed on domestic residents, it qualifies as an international currency. However, unless it is fully usable or widely used for the settlement of international transactions, it is not necessarily an international currency. When a set of qualifications are met, internationalisation of an insular currency is a demand-driven

process. International currencies are freely held and traded by non-residents in offshore markets. In domestic financial markets, non-resident investors are allowed to invest in local financial instruments of their choice without any restrictions. At the same time, non-resident borrowers are allowed to issue financial products of various kinds denominated in the domestic currency to be marketed in both domestic and offshore markets to non-resident investors. When this broad definition is adopted, it appears that the Japanese yen is the only international currency in East Asia. Other regional currencies display varying degrees of convertibility. But even the Japanese yen remains a distant third key international currency, although Japan is the second largest economy in the world and has taken steps to reform its policy and institutions to facilitate the internationalisation of the yen since the late 1990s. In contrast, internationalisation of the Australian dollar has been more or less a de facto transformation. If the Japanese experience is any guide, currency internationalisation can be a long process that requires a wide range of institutional and policy reforms with uncertain benefits and costs. One might question why small emerging economies would entertain the idea of internationalising their currencies. It appears that some countries, encouraged by the successful internationalisation of the Australian dollar, are attempting to replicate a similar experience, but they have yet to articulate the objectives of their currency internationalisation.

China may harbour the ambition of elevating the status of the renminbi commensurate with its growing economic clout in the global economy, thereby creating a renminbi bloc in Asia as Japan has been trying to make the yen the dominant anchor currency in Asia. For other emerging economies, their motives are not clear, but the intensification of competition to host a regional financial centre in East Asia may have spurred them to consider pursuing internationalisation.

This paper argues that the benefits of currency internationalisation are rather uncertain and often unquantifiable, whereas the costs of increased domestic financial instability could be substantial. In order to minimise the costs, emerging economies would be better advised to push forward in the development of domestic financial markets that are broad and liquid enough to absorb external shocks before proceeding with currency internationalisation.

Table 1

Currency Invoicing of International Trade

	United States		United Kingdom		Japan		Germany		France		Canada		Australia	
	Export	Import	Export	Import	Export	Import	Export	Import	Export	Import	Export	Import	Export	Import
1980 US Dollar	96.0	85.0	17.0	29.0	65.7	93.0	7.2	32.3	20.3	37.1				
Euro	.	.	.	.	.	.	.	.	.	.				
Yen	0.2	1.0	0.1	1.3	29.4	2.4	0.0	0.0	0.1	0.7				
Home	96.0	85.0	76.0	38.0	29.4	2.4	82.5	43.0	60.5	37.1				
Other	3.8	14.0	6.9	31.7	4.9	4.6	10.3	24.7	19.1	25.1				
1992 US Dollar	92.0	80.0	22.0	22.0	46.6	74.5	7.3	18.4	16.5	23.1				
Euro	.	.	.	.	.	.	.	.	.	.				
Yen	1.5	3.0	0.7	2.4	40.1	17.0	0.3	1.7	0.8	1.3				
Home	92.0	80.0	62.0	43.0	40.1	17.0	77.0	55.9	54.6	46.7				
Other	6.5	17.0	15.3	32.6	13.3	8.5	15.4	24.0	28.1	28.9				
2000 US Dollar			29.0	34.0	52.4	70.7			42.6	57.2			68.0	51.4
Euro			21.0	19.0	6.1	1.2			44.6	32.9			0.3	2.3
Yen			.	.	36.1	23.5			.	.			0.8	5.2
Home			46.0	42.0	36.1	23.5			44.6	32.9			28.6	28.3
Other			4.0	5.0	5.4	4.6			12.8	9.9			2.3	12.8
2001 US Dollar			29.0	38.0	52.8	70			41.0	45.7	70.0		68.8	49.5
Euro			23.0	19	7.5	2.2			47.1	44.4	.		0.5	4.8
Yen			.	.	34.9	23.4			.	.	.		0.9	4.4
Home			46.0	40.0	34.9	23.4			47.1	44.4	23.0		27.7	30.7
Other			2.0	3.0	4.8	4.4			11.9	9.9	7.0		2.1	10.6
2002 US Dollar			26.0	37	51.7	68.3	31.6	34.5	37.0	45.2			67.9	50.1
Euro			21.0	27	8.6	4.4	49.0	48.0	51.0	46.8			1.4	8.7
Yen			.	.	35.8	24.9	.	.	.	.			1.0	4.0
Home			51.0	33	35.8	24.9	49.0	48.0	51.0	46.8			27.6	30.6
Other			2.0	3	3.9	2.4	19.4	17.5	12.0	8.0			2.1	6.6
2003 US Dollar		90.3			48.0	68.3	24.1	33.9	33.6	46.9			67.5	47.9
Euro		2.0			9.3	4.6	63.0	55.2	52.7	45.3			1.4	9.4
Yen		.			38.9	25	.	.	.	.			0.9	3.6
Home		90.3			38.9	25	63.0	55.2	52.7	45.3			27.8	32.6
Other		7.7			3.8	2.1	12.9	10.9	13.7	7.8			2.4	6.5
2004 US Dollar					47.2	68.8	24.1	35.9					69.4	49.8
Euro					9.2	4.7	61.1	52.8					1.3	9.1
Yen					40.1	24.6	.	.					0.8	2.8
Home					40.1	24.6	61.1	52.8					26.2	32.1
Other					3.5	1.9	14.8	11.3						6.2
2005 US Dollar					49.2	70.9								
Euro					8.4	4.2								
Yen					38.9	23.1								
Home					38.9	23.1								
Other					3.5	1.8								

Source: Bank of Korea, Kawai (2008), Kamps (2006), EURC

Table 2

The Share of International Reserves

(% of Total)

Year	US	Germany	France	EU	UK	Japan	Switzerland
	Dollar	Mark	Franc	Euro	Pound	Yen	Franc
1976	79.7	7	0.9		2	0.8	1.4
1977	79.4	8.2	1		1.6	1.2	2
1978	76.9	9.9	0.9		1.5	2.5	1.4
1979	62.4	10.4	0.9		1.7	2.6	2
1980	55.9	11.9	1.1		2.5	3.3	2.6
1981	58.4	11.2	1		2	3.6	2.5
1982	60	10.4	1		2	3.5	2.4
1983	58.8	10.6	1		2.4	3.8	2.2
1984	57	11	1		2.6	4.8	1.9
1985	55.3	13.9	0.8		2.7	7.3	2.1
1986	56.4	13.2	0.7		2.3	7.1	1.9
1987	56	13.4	0.8		2.2	7	1.8
1988	54.6	14.2	1		2.3	6.9	1.8
1989	51.3	17.8	1.4		2.3	7.2	1.4
1990	50.6	16.8	2.4		3	8	1.2
1991	51.3	15.4	3		3.3	8.5	1.2
1992	55.3	13.3	2.7		3.1	7.6	1
1993	56.6	13.7	2.3		3	7.7	1.1
1994	53.1	15.3	2.5		2.8	7.8	0.6
1995	59	15.8	2.4		2.1	6.8	0.3
1996	62.1	14.7	1.8		2.7	6.7	0.3
1997	65.2	14.5	1.4		2.6	5.8	1.3
1998	69.4	13.8	1.6		2.7	6.2	0.3
1999	71			17.9	2.9	6.4	0.2
2000	71.1			18.3	2.8	6.1	0.3
2001	71.5			19.2	2.7	5.1	0.3
2002	67.1			23.8	2.8	4.4	0.4
2003	65.9			25.2	2.8	3.9	0.2
2004	65.9			24.8	3.4	3.8	0.2
2005	66.5			24.1	3.6	3.6	0.1
2006	65.5			25.1	4.4	3.1	0.2
2007	63.9			26.5	4.7	2.9	0.2

Source: IMF Annual Reports

Table 3

International money market instruments by currency

(% of Total)

	US dollar		Euro		Pound sterling		Yen		Australian dollar		Swedish krona		Canadian dollar		Singapore dollar	
	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II
Dec.1989	84.4	-	4.6	-	0.7	-	0.4	-	9.7	-	-	-	0.1	-	-	-
Dec.1990	77.7	-	10.1	-	2.3	-	1.0	-	8.0	-	0.3	-	0.0	-	-	-
Dec.1991	74.8	-	14.8	-	2.2	-	0.6	-	7.0	-	0.0	-	0.1	-	-	-
Dec.1992	81.3	-	10.9	-	1.5	-	0.4	-	5.5	-	0.0	-	0.2	-	-	-
Dec.1993	77.4	41.3	9.4	24.9	4.4	7.4	0.7	13.4	4.9	1.1	0.3	0.2	0.5	4.1	-	0.00
Dec.1994	69.9	39.3	14.2	26.0	4.8	7.1	3.2	15.8	3.0	1.3	0.4	0.2	0.3	3.5	-	0.01
Dec.1995	59.2	37.7	19.6	27.7	5.8	6.5	4.8	16.2	3.8	1.4	0.2	0.2	0.2	3.1	-	0.00
Dec.1996	60.9	40.7	14.5	27.2	5.0	7.3	7.2	15.0	3.3	1.5	0.0	0.2	0.2	2.5	0.0	0.00
Dec.1997	59.6	46.0	15.9	24.8	6.9	7.8	7.5	12.9	2.7	1.2	0.2	0.1	0.2	2.0	-	0.00
Dec.1998	58.1	46.8	17.3	27.2	7.2	7.7	8.1	11.1	2.9	0.8	0.0	0.2	0.2	1.3	-	0.01
Dec.1999	43.4	48.3	33.7	28.5	7.3	7.7	9.5	9.7	1.9	0.7	0.2	0.1	0.2	1.1	0.0	0.04
Dec.2000	43.5	50.6	32.2	29.5	7.6	7.5	11.1	7.5	1.4	0.5	0.1	0.1	0.2	0.9	0.1	0.06
Dec.2001	40.9	51.4	31.2	31.8	10.2	7.0	11.6	5.7	1.4	0.4	0.1	0.1	0.2	0.7	0.0	0.08
Dec.2002	33.2	46.7	40.8	37.2	12.8	7.0	5.3	4.9	1.5	0.5	0.2	0.1	0.2	0.6	0.0	0.09
Dec.2003	29.0	40.8	47.1	43.4	13.6	7.0	3.0	4.4	1.1	0.8	0.1	0.1	0.4	0.7	0.1	0.08
Dec.2004	28.7	37.0	47.5	46.8	15.1	7.4	2.1	4.0	1.5	0.9	0.3	0.2	0.4	0.8	0.1	0.10
Dec.2005	29.4	38.6	43.6	45.2	18.0	7.6	1.7	3.4	1.6	1.0	0.3	0.2	0.5	1.1	0.2	0.11
Dec.2006	32.8	36.4	40.5	47.3	16.8	8.2	1.6	2.8	1.2	1.1	0.3	0.2	0.4	1.0	0.2	0.11
Dec.2007	33.7	34.9	42.0	48.9	13.5	7.9	3.0	2.7	1.0	1.1	0.3	0.2	0.4	1.2	0.3	0.12
Mar.2008	30.6	33.8	46.5	50.1	12.8	7.5	3.4	2.9	1.0	1.1	0.4	0.2	0.4	1.2	0.2	0.12
Jun.2008	29.2	34.0	47.0	49.7	13.4	7.8	3.6	2.7	1.1	1.1	0.3	0.2	0.3	1.2	0.2	0.13
Sep.2008	32.3	35.9	46.0	47.5	10.7	8.1	3.7	2.9	0.9	1.0	0.5	0.2	0.2	1.2	0.2	0.14

Note: Columns I and II denote international money market instruments and international bonds and notes, respectively.

Source: BIS Quarterly Review: various issues

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Comments on Yung Chul Park and Kwanho Shin's paper "Internationalisation of currency in East Asia: implications for regional monetary and financial cooperation"

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I thoroughly enjoyed reading the paper by Professors Park and Shin, which not only reminds us of what qualifies a currency to be internationalised but also reviews the numerous costs and benefits of currency internationalisation as well as its implications for financial and monetary integration.

My comments on the paper are based on three elements, namely: the relationship between the internationalisation of a currency and domestic financial stability, particularly in emerging economies; the role of currency internationalisation as an external shock absorber; and, finally, I will touch briefly on the Indonesian experience in handling the issue of currency internationalisation.

The internationalisation of a currency and domestic financial stability

One conclusion drawn in the paper, with which I agree, is that the benefits of currency internationalisation remain uncertain and are often unquantifiable whereas the costs involved in increased domestic financial instability can be substantial. The latest fluctuations in the global financial market provide a stark illustration of the risk that could emerge as a result of currency internationalisation. The speculative element of exploiting financial innovation and imbalanced development among both financial and goods markets will exacerbate domestic financial market instability. Therefore, the clear priority of emerging economies, when considering a policy of currency internationalisation, is to fully prepare the market and domestic players beforehand. The benefits to be reaped from internationalising one's currency are not significant. In fact, it is clear that, in the short term, the currency would become an object of speculation.

The effects of currency internationalisation on the domestic money market have been well illustrated by a number of empirical studies regarding the influence of currency futures and options contracts in various countries. Jochum and Kodres (1998) argued that currency trading in futures and options contracts carries the risk of volatility in the spot market. In addition, studies such as those conducted by Clifton (1985), Chatrath et al (1993) and Crain (1995) demonstrated that currency trading in futures contracts spurs currency volatility in the spot market. A study by Kaziow and Arbaeus (2007) also showed that currency trading in the futures market leads to increased currency volatility, and that speculative trading on the futures market directly (day to day) raises currency volatility on both the spot and the futures market.

Such domestic financial instability risk is one of the primary considerations for Indonesia not to internationalise the rupiah. The domestic foreign exchange market in Indonesia is not yet mature and is vulnerable to speculation. Although pressures in the domestic foreign exchange market are not fully isolated, restricting currency internationalisation has helped to

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minimise the fluctuations of the rupiah. I will discuss the development of rupiah internationalisation in more detail below.

The role of currency internationalisation as an external shock absorber

The risk of domestic financial market instability means that several areas would require strengthening before a currency could be internationalised. Professors Park and Shin argue that emerging economies should push forward to develop domestic financial markets that are broad and liquid enough to absorb external shocks before proceeding with currency internationalisation. In my opinion, their argument constitutes a step in the right direction.

However, lessons from the current global financial crisis have shown that broadening the domestic financial market does not fully absorb external shocks: the financial system is a shock amplifier rather than a shock absorber. It is true that sound financial system development contributes positively to economic activities. A more efficient financial system reduces the cost of capital for the corporate sector and improves household capacity in terms of consumption smoothing. But, on the other hand, financial innovation still has inherent risks and weaknesses. Jenkinson et al (2008) looked at five weaknesses that, in general, lead to market imperfection. These are: incomplete information; alignment of incentives; liquidity in financial markets; robustness of financial market infrastructure; and system dynamics. Such weaknesses can spark shocks in the financial market and quickly intensify strong pressures on macroeconomic stability, as can be seen occurring today.

The risk stemming from the financial system requires us to consider other qualifications to reduce the potential of the financial system acting as a shock amplifier during the introduction of currency internationalisation. I would argue that, in this regard, indicators of current account flows should be a complementary qualification in the pursuit of currency internationalisation. Conceptually, a dominant role of international trade in the balance of payment dynamics, and one which is elastically affected by the exchange rate, would optimise the role of currency internationalisation as an external shock absorber. This precondition strengthens the argument made by Professors Park and Shin that large volumes of goods and assets could facilitate the use of the currency as a unit of account.

Currency internationalisation and market integration

The success of currency internationalisation, determined by the more dominant role of trade volume in affecting externalities, is congruent with the idea of market integration. Currency internationalisation is, among other things, part of the necessary infrastructure in the implementation of market integration in East Asian countries. This infrastructure will supplement a number of other infrastructural aspects such as regional clearing and settlement systems, regional credit guarantee institutions, hedging facilities, and the establishment of regional credit rating agencies. This is clearly in line with Park and Shin's opinion that infrastructure construction will also need to be accompanied by the harmonisation of legal and regulatory systems, domestic clearing and settlement systems, market practices, rating standards, accounting and auditing practices, and withholding taxes on bond coupon payments across the countries in the region.

Regionally, currency internationalisation might be a future consequence of the establishment of the ASEAN Economic Community (AEC) in 2015. An ASEAN single market and production base will comprise five core elements: (i) the free flow of goods; (ii) the free flow of services; (iii) the free flow of investment; (iv) the freer flow of capital; and (v) the free flow of skilled labour. The accomplishment of these targets has far-reaching implications for

currency internationalisation in ASEAN because a solid infrastructure that facilitates the five core elements must be created. Although this economic union does not currently include monetary integration, the rise in regional trade/investment volume may require ASEAN countries to use their respective currencies as a regional medium of exchange, or at least to internationalise currency in the region.

The issue of currency internationalisation in Indonesia

Following the 1997 crisis as well as a series of short-term exchange rate shocks that could have led to unwanted macro and financial instability, the acceleration of Indonesia's economic integration in the global financial market has become a policy concern in Indonesia. As you might already know, the rupiah is freely convertible for capital account transactions as well as current account transactions and concomitantly permitted currency internationalisation. As a consequence, the rupiah has become a tradable currency in the international market. Ironically, the international use of the rupiah for export and import payments, however, has never been significant. Export and import invoices are primarily denominated in the major world currencies, including the US dollar, the yen, the Singapore dollar and the euro. For example, those four currencies have accounted for around 98% of Indonesian export and import payments in the past three years; thus, the internationalisation of the rupiah has been confined mostly to the financial market.

Our experience suggests that, in a liberal financial system, financial markets can be subject to self-fulfilling panic, especially in the presence of highly leveraged positions. In a segmented and thinly traded foreign exchange market, exchange rate movements are extremely reactive to any change in sentiment – especially negative issues – and are subject to manipulation and herd behaviour. Many episodes of excessive overshooting and extreme rupiah volatility cannot be explained by the domestic macroeconomic situation. Rupiah internationalisation provided an opportunity for non-residents to take advantage of this loss of confidence and to speculate on the offshore rupiah market. Speculative activity in the rupiah caused excessive exchange rate volatility and made it difficult for monetary policy to maintain rupiah stability, which had a negative impact on the overall macroeconomic situation.

Because of these problems, in 2001 Bank Indonesia designed policies to reduce the volatility of the rupiah exchange rate originating from foreign exchange trading without underlying economic transactions, while maintaining its commitment to a free foreign exchange regime. This regulation aimed to stabilise the rupiah by reducing the impact of rupiah trading by offshore players, without sacrificing real economic transactions and foreign investment.

The regulation consisted of two main parts, namely restrictions on certain transactions by banks to non-residents and limitations on derivatives transactions for non-residents with some exceptions. The regulation:

- prohibits banks from extending loans and other sources of rupiah funding to non-residents;
- limits banks from conducting derivatives transactions without underlying transactions for non-residents;
- prohibits banks from transferring the rupiah to non-residents without underlying economic activities in Indonesia.

We recognised that these restrictions do not automatically contain exchange rate fluctuations. There are many factors, including non-economic factors, that affect the value of the rupiah. As in most segmented and thin markets, as well as in the context of Indonesia's small, relatively open economy, the rupiah exchange rate is largely driven by external shocks. The ongoing global financial turmoil is an example of this condition. The

deleveraging process amid increasingly risk-averse behaviour on the part of global investors has triggered a capital reversal, exaggerated by the slowdown in export revenue.

Let me conclude by saying that, in the future, policy must heed efforts to deepen the financial market, cautiously, and must be mindful of the relative preparedness of institutions and domestic players. Preparations towards currency internationalisation are also required in Indonesia, in particular taking into consideration the prevailing direction of regional economic integration, which is the commitment of ASEAN.

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A generation of an internationalised Australian dollar[1]

Ric Battellino[2] and Michael Plumb[3]

1. Introduction

When the Bretton Woods system collapsed in the early 1970s, Australia, unlike many other developed economies, did not move immediately to a floating exchange rate. Rather, exchange rate policy in Australia moved through several regimes, gradually providing an additional degree of flexibility in the exchange rate. Reforms did not always follow a preset plan but were often a response to external forces exposing deficiencies in the prevailing system.

Eventually, in 1983, the currency was floated and capital controls were dismantled. These were the core reforms that led to the "internationalisation" of the Australian dollar. However, the transition was facilitated by other reforms in Australian financial markets, including, very importantly, the development of an active local bond market and a non-deliverable forward currency market.

It is now 25 years since the Australian dollar was floated. In that time, it has become widely accepted that the Australian economy has benefited greatly from an internationalised currency. The floating exchange rate has acted as a buffer to external shocks, particularly shifts in the terms of trade, which, in Australia's case, can be very substantial. It has allowed the economy to absorb these shocks without the large inflationary or deflationary pressures that tended to result under the previous fixed or managed exchange rate regimes. This has been well demonstrated on a number of occasions, including during recent events in global financial markets.

This paper begins with a brief overview of Australia's move from a fixed to a floating exchange rate and the abolition of capital controls, and provides some information on the extent to which the Australian dollar is now internationalised. It then discusses the implications of this for financial markets, the conduct of monetary policy, the balance of payments and financial stability.

2. Australian dollar internationalisation: a historical perspective[4]

As noted, exchange rate policy in Australia moved through several regimes during the decade or so before the currency was floated. The first major change occurred in 1971, when exchange rate policy shifted from pegging to the British pound to pegging to the US dollar. This was followed by a peg to a trade-weighted exchange rate index and then by a crawling peg against the same index. While the pegs meant there were long periods when the currency did not move, these were interrupted by occasional realignments in response to

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[1] This paper draws heavily on Debelle and Plumb (2006). The authors would also like to thank Patrick D'Arcy, Crystal Ossolinski and Sophia Davis for their assistance.

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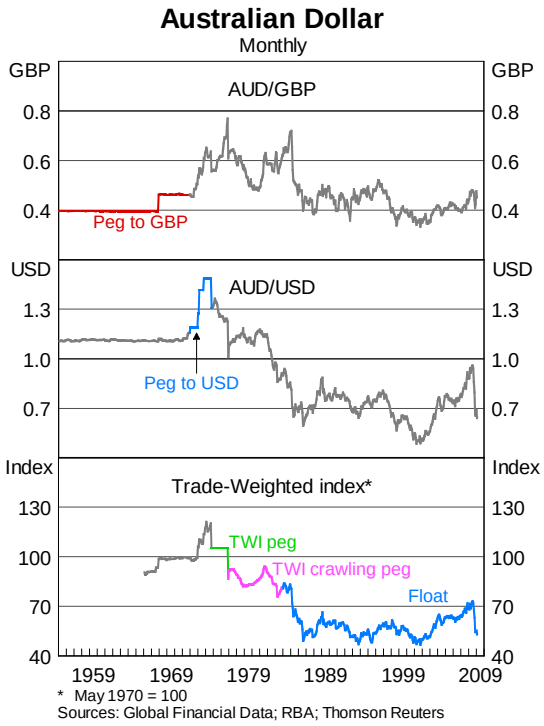
[4] For a more detailed discussion, see Debelle and Plumb (2006).

balance of payments and monetary pressures. The realignments invariably caused a good deal of turmoil in markets and the economy more generally.

The Australian dollar was eventually floated in 1983. In essence, the float meant that:

- banks were no longer required to clear their spot foreign exchange positions with the Reserve Bank each day;
- the Reserve Bank ceased announcing an indicative midrate for the Australian dollar against the US dollar; and
- exchange controls were removed.

Figure 1



At various stages in the pre-float era, the exchange rate was used as an instrument to achieve the goals of internal or external balance. At times, the conflict between those goals was the catalyst forcing change in the exchange rate regime. A recurring problem was that, with Australian markets becoming increasingly integrated into world markets, large international capital flows were making it difficult for the authorities to control domestic monetary conditions. The eventual decision to float the currency was made not because the authorities had exhausted foreign exchange reserves, as is often the case in emerging market economies, but because the country was facing large inflows of capital that were undermining monetary control.

Other factors, besides mounting capital flows, also posed challenges to prevailing exchange rate arrangements in the years leading up to the float. At various points, financial markets in Australia developed ways to circumvent the regulatory framework. A good example was the formation of the so-called foreign currency hedge market in the mid-1970s, established entirely by private sector market participants, which operated alongside the physical foreign

exchange market but was outside the direct control of the authorities.[5] This was a non-deliverable forward market that began as a means of managing exchange rate risk, given the extremely limited forward exchange facilities offered by the Reserve Bank of Australia. The market was onshore, with settlement of contracts taking place in Australian dollars. There was no exchange of foreign currency, and so the forward cover was achieved without violation of existing exchange controls. The authorities were aware of the formation of this market, but chose not to interfere with its development. In the event, as this market allowed banks and corporations to develop their currency trading skills, it helped in the relatively smooth transition from a managed to a floating exchange rate.

3. How internationalised is the Australian dollar?

Kenen (2009) identifies a number of conditions for classifying a currency as internationalised, including:

- no restrictions on domestic or foreign entities transacting in the currency, in both spot and forward markets; and
- foreign entities being able to hold and issue financial instruments denominated in the currency, both in the domestic market and in offshore markets.

The floating of the Australian dollar and the removal of capital controls meant that the Australian dollar satisfied the first condition. With no restrictions on domestic and foreign entities transacting in the currency, turnover in the Australian dollar increased sharply in the years following the float. Today, the Australian dollar is the sixth most traded currency globally, while AUD/USD is the fourth most traded currency pair.[6] As another sign of internationalisation, more than half of turnover takes place in offshore markets (that is, between non-residents). As noted by McCauley (2006), this is true for most major currencies. A notable exception is the pound sterling, reflecting the financial centre status of London (Table 1).

[5] See Debelle et al (2006) for more detail.

[6] See BIS (2007).

Table 1

Global foreign exchange trading

Average daily turnover of spot, outright forwards and foreign exchange swaps
in billions of US dollars in April 2007

	Global trading	Domestic trading	Offshore trading	Memo: Offshore percentage
US dollar	2,666	548	2,118	79
Euro	1,139	264	875	77
Japanese yen	510	170	340	67
Pound sterling	461	297	163	35
Swiss franc	209	69	139	67
Australian dollar	205	85	121	59
Canadian dollar	130	40	89	69
Swedish krona	86	24	62	72
Hong Kong dollar	86	73	12	14
Norwegian krone	67	20	47	71
New Zealand dollar	59	7	51	88
Mexican peso	39	15	24	62
Singapore dollar	38	24	13	36
Korean won	34	27	7	20
South African rand	29	11	18	63
Danish krone	28	24	4	14
Russian rouble	25	25	0	0
Polish zloty	24	7	18	73
Indian rupee	21	16	5	22
Chinese renminbi	15	9	6	38
New Taiwan dollar	12	7	5	44
Brazilian real	11	4	7	61
Hungarian forint	9	4	5	56
Czech koruna	7	4	3	48
Thai baht	6	5	2	26
Turkish lira	5	2	3	56
Philippine peso	3	2	1	37

[1] Domestic trading includes both onshore-onshore and onshore-offshore trading.

Source: BIS (2007), Tables E.1 and E.7.

The Australian dollar also readily qualifies as internationalised on the second condition – ie non-resident participation in Australian dollar financial instruments. This takes several forms: non-residents holding domestically issued bonds; non-residents issuing Australian

dollar bonds into the Australian market; residents issuing Australian dollar bonds into offshore markets; and non-residents issuing Australian dollar bonds into offshore markets.

An important precursor to these markets was the development of the domestic Australian government bond market. This market grew quickly from the early 1980s, after the authorities adopted the general principle that investors should be able to have full confidence that the return they would earn on their government bond investments would be purely market-determined.

Like many other countries, in the postwar years Australia had a range of regulations on the bond market, including the direct setting of bond yields and requirements on some investors to be captive holders of bonds. These were aimed at keeping down the cost of debt, but the distortions they created also prevented a secondary market from developing.

When the government removed those controls in the early 1980s and moved to an auction system for issuing debt, it was initially required to pay very high real yields on its debt issues. But the openness and transparency of the arrangements quickly established the government's credibility. Demand for bonds increased, including on the part of offshore investors, and yields fell noticeably in the first year after the arrangements were adopted.

Once a risk-free government yield curve had been established, the way was open for transparent pricing of bonds by other issuers. The combination of a deregulated bond market and a floating exchange rate with no capital controls in turn allowed development of the cross-currency swap market. Since this market allows investors and issuers to mix and match credit risk, currency risk and interest rate risk in any desired combination, it provided a very significant boost to market activity by both domestic and foreign issuers and domestic and foreign investors.

The Australian dollar bond market is now highly internationalised, although not as much as the Hong Kong dollar, New Zealand dollar, Swiss franc, pound sterling or euro (McCauley (2006)). Table 2 shows that, as at late 2008, about 50% of outstanding Australian bonds were issued offshore, about 60% were held by non-residents and about 40% were issued in foreign currency (and hedged back to Australian dollars).

Table 2

Bonds issued by Australians or in Australian dollars

In billions of Australian dollars, September 2008

		Location of issue		Location of investor		By currency	
Issuer	**Total outstanding**	**Domestic**	**Offshore**	**Domestic**	**Offshore**	**AUD**	**Non-AUD**
CGS	59	59	0	24	35	59	0
State governments	114	77	36	64	50	113	1
Financials	399	121	278	106	293	137	262
Corporates	120	50	71	37	84	51	69
ABS	182	112	70	76	106	113	69
Non-resident	135	80	55	43	92	135	0
Total	1,009	499	510	350	660	608	401

Source: ABS, RBA.

4. The implications of an internationalised currency

(a) Financial markets

Exchange rate volatility has been considerably higher in the post-float period, although, of course, the large discrete changes in the exchange rate which occurred in the fixed rate regimes, reflecting the occasional large realignments, no longer occur (Figure 2). Arguably, market participants found the latter to be more damaging than short-run volatility, since discrete administered changes are hard to predict and difficult to hedge against. Market participants readily adjusted to the increased short-run volatility, partly because, as noted, they had honed their trading skills in the non-deliverable forward market. Over time, there has been a widespread move to increased use of hedging by Australian corporations and financial institutions.

While there was an increase in the volatility of the exchange rate, the volatility in nominal interest rates declined (Figure 3). In turn, this contributed to less volatility in the macroeconomy (Simon (2001)). This development is not unique to Australia (Blanchard and Simon (2001)). Not all of this was due to the new exchange rate arrangements. Other economic reforms have also contributed, including those in the product and labour markets, as well as improvements to the policy frameworks for both fiscal and monetary policy (Gruen and Stevens (2000)).

Figure 2

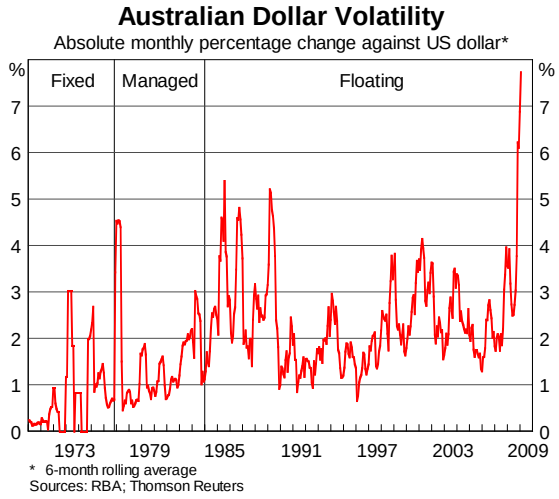
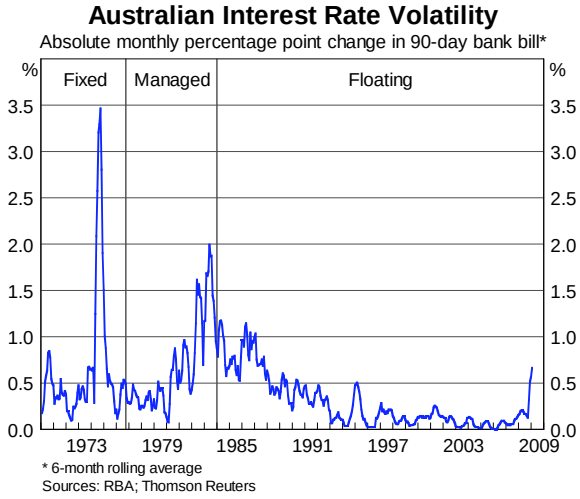


Figure 3



As might be expected, internationalisation has increased the relative influence of offshore factors on domestic markets. Campbell and Lewis (1998) demonstrated that Australian bond yields are more affected by US economic news than Australian news. In terms of the Australian dollar, Clifton and Plumb (2008) show that volatility in the AUD/USD increases around the times of key US economic data releases.

The impact of US news on the AUD/USD is not always predictable. Conventional theory would suggest that negative economic news in the United States should lead to an appreciation in the Australian dollar relative to the US dollar, all else equal. For example, a weaker than expected US employment report would generally be expected to put upward pressure on the AUD/USD, due to its positive effect on expected Australia-US yield differentials. However, because weak US data can also have negative implications for global growth, commodity prices and risk appetite, they can exert downward pressure on the AUD/USD. Which of these effects will dominate depends on the prevailing extent of market

volatility and uncertainty (Edwards and Plumb (2009)). In periods of elevated financial market volatility and uncertainty about the global economy, the second effect tends to dominate, such that US data "surprises" are likely to be positively correlated with the AUD/USD. On the other hand, in more normal market conditions, the impact of economic news on yield differentials is likely to be the primary concern, and US data surprises are more likely to be negatively correlated with the AUD/USD. Evidence suggests that this effect has been strongest in the period since 2005, and only appears to hold for US data releases pertaining to growth, employment and production.

Volatility in other Australian dollar crosses, namely AUD/EUR and AUD/JPY, also increases around the times of US data releases. A likely explanation is that news about US economic growth will affect expectations of current and future global growth prospects, which are relatively more important for the Australian dollar.

The Reserve Bank has allowed large swings in the exchange rate during the post-float period. Its main interventions have been only after the exchange rate has moved significantly from its long-run average (Macfarlane (1993), Becker and Sinclair (2004)). As noted by Becker and Sinclair (2004), this strategy of generally buying low (in terms of foreign currency) and selling high has been a profitable one for the Reserve Bank, which, according to Friedman (1953), can be regarded as an indication that the intervention has been broadly successful.

The Reserve Bank has also intervened at times when market conditions seemed unsettled with high volatility and wide spreads. Over time, however, the Reserve Bank has become less concerned about short-term volatility and has intervened less frequently.

This approach to foreign exchange intervention has meant that the Reserve Bank has never seen the need to accumulate a large quantity of foreign exchange reserves, particularly given the risks a central bank faces by holding a large foreign exchange open position on its balance sheet. Holdings of foreign exchange reserves have averaged around USD 20 billion, or about 60% of the Reserve Bank's assets in the post-float period. Relative to GDP, this is broadly in line with many other developed economies and has proved adequate to support the intervention policy the Bank has followed.

(b) Monetary policy

It is widely accepted that the floating exchange rate has served the Australian economy well over the past 25 years.[7] The flexible exchange rate has mitigated the impact of external shocks on the domestic economy, thereby contributing to a reduction in output volatility.

The transition to a floating exchange rate was not without its difficulties. After the rate was floated, there was no longer a nominal anchor for the economy. A number of frameworks for monetary policy were tried, with varying degrees of success.[8] Eventually, in the early 1990s, monetary policy moved to an inflation targeting framework, with the inflation target replacing the exchange rate as the nominal anchor in the economy. Under this regime, monetary policy does not target any particular level of the exchange rate; nor, indeed, has the Reserve Bank used intervention to defend any level of the exchange rate. Instead, the exchange rate is now a part of the transmission mechanism rather than the policy target.

Exchange rate fluctuations have played an especially important role in smoothing the influence of terms-of-trade shocks, which, for a commodity producer such as Australia, can

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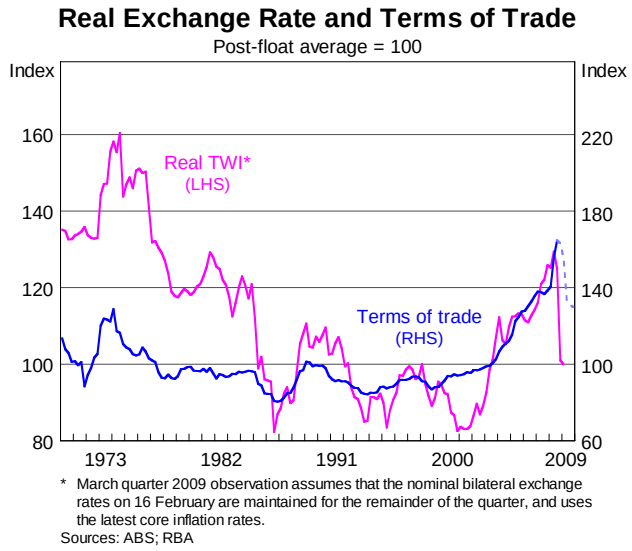
[7] For a discussion of the experience over the first decade of the float, see Fraser (1992) and Macfarlane (1993).

[8] Grenville (1997) describes the experience with these various frameworks for monetary policy in the floating exchange rate period.

be very large (Figure 4). Gruen and Wilkinson (1994) documented the relationship between the Australian dollar (in real terms) and the terms of trade.[9] Chen and Rogoff (2002) found a similar relationship in other commodity-producing countries but noted that the relationship in Australia had been particularly robust.

Figure 4



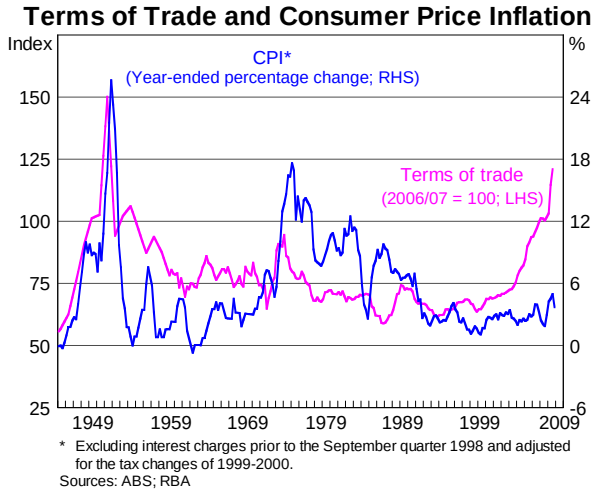
Under the fixed exchange rate regime, the authorities tried to accommodate terms-of-trade shocks through occasional realignments of the exchange rate. But, invariably, these were too little and too late. Thus, the exchange rate did not successfully buffer the swings in the terms of trade.

In contrast, under the floating regime, the exchange rate has been more effective in countering the effects of terms-of-trade movements, and has therefore assisted in the maintenance of internal balance (Blundell-Wignall and Gregory (1990)). Take the case of a rise in the terms of trade as a result of an increase in the prices of commodities. This provides an expansionary impulse to the economy through an increase in income, while the increased demand for inputs from the export sector also creates inflationary pressure. An appreciation of the exchange rate neutralises these influences to some extent by inducing a substitution of imported goods and services for domestically produced goods and services, and it also puts downward pressure on inflation.

Thus, as Blundell-Wignall and Gregory demonstrate, the nominal exchange rate appreciation induces the necessary appreciation of the real exchange rate to restore internal balance following the terms-of-trade shock. In contrast, under the fixed exchange rate regime, the real appreciation must result from an increase in inflation, unless there is an adjustment in the exchange rate peg. This was certainly evident in the large rise in the terms of trade that occurred in Australia in the early 1950s at the time of the Korean war (Figure 5).

[9] Australia is effectively a price-taker in most of its export markets; hence there is little endogeneity between the exchange rate and the terms of trade.

Figure 5



The relationship between the floating exchange rate and terms of trade is, of course, not precise. There have been periods when the exchange rate has moved away from a range that might be considered consistent with economic fundamentals at the time. One such example was in the late 1990s. At that time, Australia's terms of trade were rising, but the nominal and real exchange rates declined substantially. Part of this decline reflected the large appreciation of the US dollar at the time, as there was a global portfolio shift towards investment in technology stocks at the expense of so-called "old economy" stocks prevalent in Australia.

Attempts to find a role for variables other than the terms of trade in explaining movements in Australia's real exchange rate have generally proven less successful. At times interest differentials have had an important role, and at various times the stock of foreign liabilities, the current account balance or growth rate differentials have also been found to be influential.[10] In part, the changing influence of some of these variables reflects the varying focus of financial market participants.

In addition to counterbalancing the influence of external shocks, the exchange rate has had a direct influence on inflation. This is in contrast to experience with the fixed exchange rate regimes, under which Australia directly "imported" the inflation rate of the country (or group of trading partners) to which the exchange rate was pegged. Over time, however, the direct influence of the exchange rate on inflation has waned; the pass-through of exchange rate changes to consumer price inflation, through changes in the prices of tradable goods and services, has become considerably lower (Heath et al (2004)). This phenomenon is not unique to Australia. It has also occurred in the United Kingdom, Brazil, Chile and the United States, inter alia. One consequence of this reduced pass-through of exchange rate changes to inflation is that the Reserve Bank has become more tolerant of exchange rate variations and less inclined to intervene in the foreign exchange market.

Two episodes highlight the role that the exchange rate has played in macroeconomic adjustment in the post-float period in Australia. The first occurred in the mid-1980s as the terms of trade declined by around 15% between March 1985 and March 1987. A sizeable depreciation of the exchange rate of around 40% over the same period was linked to the terms-of-trade decline and was concentrated in two large movements in February 1985 and July 1986. The depreciation was sizeable in both nominal and real terms, and the exchange

[10] See, for example, Blundell-Wignall et al (1993), Tarditi (1996) and Beechey et al (2000).

rate arguably overshot the new equilibrium. Inflation did increase, but not to the extent that had occurred when the exchange rate had devalued under the fixed rate regimes. The real depreciation served to counter the impact of the decline in the terms of trade and provided a boost to the tradables sector and a substitution towards domestic production. Perhaps most importantly, the general sense of crisis created by the falling Australian dollar was an important catalyst for the range of reforms to the economy, particularly labour and goods markets. These helped set the scene for the much better performance of the Australian economy over the subsequent couple of decades.

A second episode involved the rise in the terms of trade between 2003 and 2008. The net rise in the terms of trade over this period – 65% – was the largest since the boom in wool prices in the early 1950s. Between 2003 and mid-2008, the exchange rate rose by about 40% in trade-weighted terms, the largest cumulative appreciation in the post-float period. This sharp rise helped to dissipate the inflationary pressures on the Australian economy that came from the terms of trade. Whereas in the 1950s inflation rose to a peak of over 20%, in the latest episode inflation peaked at 5%.

(c) The balance of payments and capital flows

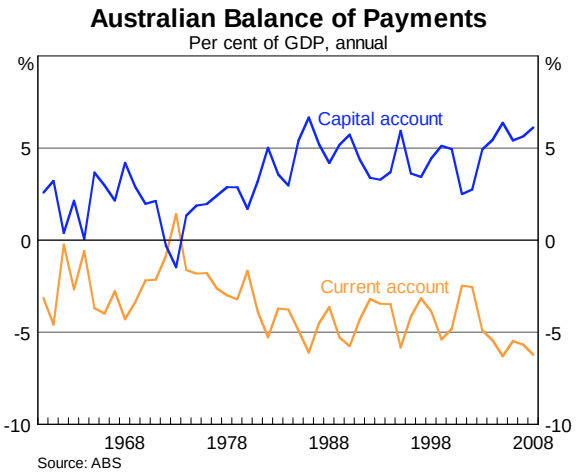
Under a fixed or managed exchange rate, the authorities have some degree of influence over composition of the balance of payments as between the current account balance and the capital account balance. For example, they can directly change the level of the exchange rate or they can encourage or repress capital flows through various controls.

This capacity does not exist with a floating exchange rate and an internationalised currency. While a floating exchange rate will precisely equilibrate the balance of payments, it leaves the authorities with no direct influence over its composition between the current account and the capital account. This can be illustrated by the case of Australia.

In the 25 years before the floating of the currency, Australia's current account averaged a deficit of about 2.5% of GDP. This was matched by net capital inflows of similar magnitude, made up of gross inflows of about 2.5% of GDP and negligible outflows. The absence of outflows was the consequence of tight capital controls, introduced during the Second World War, designed to prevent scarce domestic savings from leaving the country.

The removal of capital controls when the currency was floated in 1983 saw capital outflows surge. But, within a relatively short period of time, capital inflows increased even more. On balance, foreign investors were attracted by the changes to the economy that followed the liberalisation of exchange arrangements. In the 25 years since the float, net capital inflows have averaged 4.5% of GDP (Figure 6).

Figure 6



By definition, higher average capital inflows have meant that the current account deficit has also increased, which begs the question of what has been cause and effect.

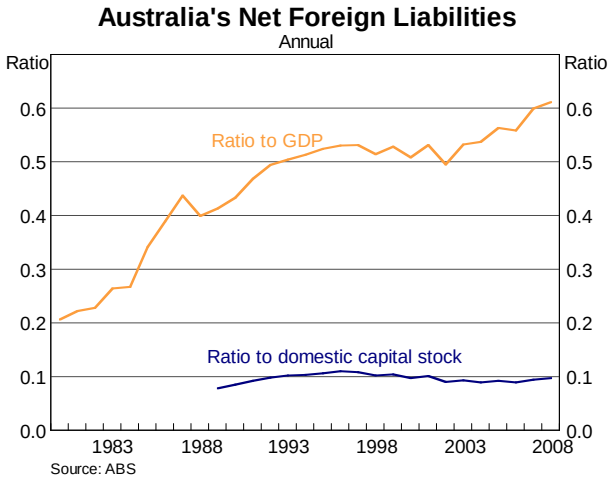
It is beyond the scope of this paper to give a detailed answer to this question but it would be wrong to conclude that the widening of the current account deficit was due to less disciplined macroeconomic management. The current account/capital account balances under a floating exchange rate are determined simultaneously by complex economic and financial interactions, in which foreign investors play a significant role. Importantly, if foreign investors decide that they want to invest more in a country, for example because they see it as being well managed and offering good long-run returns, the resulting increase in net capital inflow will – through changes in the exchange rate, other financial prices and economic behaviour more generally – result in the country running a wider current account deficit. This, broadly speaking, has been Australia's experience.

Some commentators argue that a balance of payments position that involves persistent current account deficits with matching capital account surpluses is not sustainable. But Australia has, excepting brief episodes, consistently run such a position for well over a century, yet it remains a stable, well performing economy.[11] The lesson we would draw from the Australian experience is that as long as capital inflow is put to good use, and as long as consumers, businesses and financial institutions avoid foreign currency risk on these liabilities, such a balance of payments position is sustainable.

Measures such as the ratio of net foreign liabilities to GDP are not necessarily good indicators of the sustainability of the balance of payments. In Australia's case, this ratio has risen quite noticeably since the floating of the currency, from 27% to over 60% (Figure 7). Yet, as noted, this has not been accompanied by any decline in economic performance or increase in financial instability.

[11] See Belkar et al (2007).

Figure 7



Another measure is to scale net foreign liabilities relative to the domestic capital stock, so as to gauge trends in net foreign claims on the domestic capital stock. This measure for Australia shows that, relative to the domestic capital stock, net foreign liabilities have fluctuated around a flat trend, at about 10% (Figure 7).

(d) Financial stability

A striking feature of Australia's experience with a floating exchange rate is that, despite some very large fluctuations in the exchange rate, the health of the corporate and financial sectors has been largely unaffected by exchange rate gains and losses. This reflects the fact that, while Australia has substantial net foreign liabilities, these are mainly denominated in domestic currency. The debt that is not issued to foreign investors in Australian dollars is hedged back to Australian dollars.

The country as a whole is able to do this because foreigners are prepared to hold part of their portfolios in Australian dollars. In other words, the currency risk on external liabilities is borne by foreigners, not by Australians.

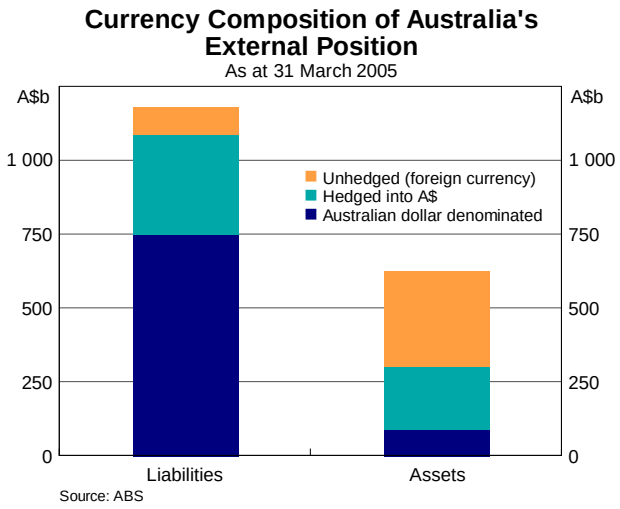
It has always been accepted that countries such as the United States, which issue reserve currencies, are able to shed foreign currency risk to foreigners. But other countries can also do this if they are well managed and able to sustain the confidence of foreign investors.

Australians learned early in the post-float period about the dangers of unhedged foreign currency borrowing. In the mid-1980s, some borrowers funded themselves in Swiss francs to avoid paying much higher domestic interest rates. The risks in doing so quickly became clear when the Australian dollar subsequently depreciated sharply against the Swiss franc. Many of these borrowers were unprepared for the rise in the Australian dollar payments required to service their foreign debt liabilities. The scale of this borrowing was small enough that it did not have an impact on the economy or the soundness of the banking system, but it received enough publicity to provide a salutary lesson to Australian banks and borrowers. This episode, together with ongoing experience with a floating exchange rate, has encouraged the extensive hedging of foreign currency loans that is present today. Movements in the exchange rate therefore do not affect the Australian dollar value of these debt liabilities and thereby the ability of the borrower to service (and ultimately repay) those liabilities. Australia's equity liabilities are all denominated in Australian dollars, so their value is also unaffected by movements in the exchange rate.

With foreign liabilities largely in domestic currency and foreign assets denominated in foreign currency, in net terms Australia has a long position in foreign currency (Figure 8). As noted,

this is similar to the situation in the United States. Hence, an exchange rate depreciation reduces the value of Australia's net foreign liabilities. This acts as a countercyclical force on the economy, in contrast to the procyclical force that arises when a country has net foreign currency liabilities.

Figure 8

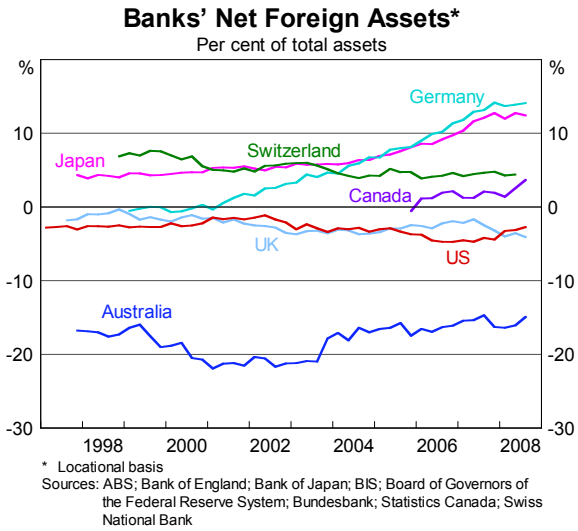


The Australian case is also interesting because of the role that banks play in intermediating between the domestic economy and international investors. About 50% of the gross foreign liabilities of the country are represented by the foreign liabilities of banks.

The reasons why the banks have assumed such a prominent role in this regard is because of their strong credit rating. Australian banks are among the most highly rated Australian corporates and, indeed, are part of a very small group of AA-rated banks internationally. Australian banks are therefore able to borrow from foreigners on more attractive terms than other Australian corporations, and it is not surprising that, over time, they have accounted for an increasing share of the external borrowings by Australians. Note that Australia does not have many government bonds on issue, which limits this avenue for investment by foreigners.

Foreign liabilities make up about 30% of Australian banks' total funding. Net foreign liabilities are about 15% of assets, which is quite large by international standards (Figure 9). Some commentators see this as a point of vulnerability.

Figure 9



But the evidence from the past year suggests that the tendency to regard foreign liabilities as a point of weakness and foreign assets as a point of strength is too simplistic. Many, for example, had seen the net foreign asset positions of European banks as a sign of strength, but in the event these positions exerted severe pressure on some banks; not only was the credit quality poor, but the funding of these positions left some banks with severe liquidity problems. In effect, those banks had funded long-term US securities holdings with short-term interbank US dollar borrowing. When the interbank market became disrupted, banks were left with a severe liquidity shortage, which ultimately had to be relieved by the Fed providing US dollar swap arrangements.

The important consideration is not whether banks are running a net foreign asset or net foreign liability position, but how they are managing their positions and what residual risks they are running. In the case of the Australian banks, the first point to make is that they fully hedge the currency risk associated with foreign liabilities. Second, the maturity and interest rate exposures on these borrowings are carefully managed in an integrated way with those arising from their domestic borrowings, so that there are no unintended exposures for the bank as a whole. That the Australian banks have been relatively unscathed by the severe "stress test" administered by markets during the past year is an indication that they are prudently managing their exposures.

5. Conclusions

For Australia, the move to an internationalised currency a generation ago has proved to be very favourable. It greatly assisted in the management of the economy, spurred the development of dynamic financial markets and facilitated subsequent reforms to the goods and labour markets. It is hard to avoid the conclusion that the internationalisation of the currency has made a material contribution to the living standards of Australians.

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Comments on Shyamala Gopinath's paper "An internationalised rupee?" and Ric Battellino's paper "A generation of an internationalised Australian dollar": a journey through time[1]

Diwa C Guinigundo[2]

Introduction

I would like to thank the Bank of Korea and the BIS for organising this seminar on currency internationalisation and for inviting me to be a discussant for Session 6: "Monetary policy challenges with an internationalised currency". It is my privilege to discuss the two papers for that session, namely: "An internationalised rupee?" and "A generation of an internationalised Australian dollar". Instead of discussing these two interesting papers individually, I would rather focus on the issues and lessons that can be drawn from the contrasting experiences of Australia and India with currency internationalisation. And since their experiences cover a lengthy period (for Australia, since 1971; and for India, since 1959), I have entitled my remarks: "'An internationalised rupee?' and 'A generation of an internationalised Australian dollar': a journey through time."

The first issue I would like to stress is that there appears to be an evolutionary process involved in currency internationalisation.

For the Australian dollar, floating practically took place after 12 years, from 1971 to 1983 (from pegging to the pound sterling, to pegging to the US dollar, then pegging to a trade-weighted exchange rate index, followed by a crawling peg to the same index and periodic realignments). Capital controls were dismantled in 1983 after many years.

It is worth noting that, in the case of Australia, reforms did not always follow a preset plan. They were often a response to external forces exposing deficiencies in the prevailing system. The Australian dollar has been an internationalised currency since 1983 (Battellino and Plumb (2009)).

The Indian rupee, on the other hand, started as an official currency of other economies (Kuwait, Bahrain, Qatar, the United Arab Emirates and Malaysia) and remained so until 1959. Effective markets for the Indian rupee exist; anecdotal evidence shows that it is accepted in Singapore, Malaysia, Hong Kong, Sri Lanka and the United Kingdom. It should be noted that the Indian rupee is not part of the proposed Asian Currency Unit (ACU). India is considered small in terms of GDP, trade volume and foreign exchange turnover. Moreover, India considers micro/macrostabilisation paramount over directly pursuing currency internationalisation. We cannot argue against that.

The experience of India therefore underscores an important point: currency internationalisation cannot be decided in one day and pursued the next; it comes about after a long evolutionary process, when all the building blocks are in place.

Let me touch on my second point: whether currency internationalisation is an end in itself.

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[1] Extemporaneous remarks based on a PowerPoint presentation.

[2] Deputy Governor, Bangko Sentral ng Pilipinas.

Allow me to quote Battellino and Plumb: “The Australian economy has benefited greatly from an internationalised currency.” Its floating exchange rate has served as a buffer to external shocks, particularly shifts in terms of trade, which can be substantial in the case of Australia. It has also allowed the economy to absorb these shocks without the large inflationary or deflationary pressures (Battellino and Plumb (2009)).

Note that events between 1971 and 1983 (ie foreign exchange pressures, external shocks, output and inflation volatility, repressed financial markets) were no different from the conditions faced by emerging economies today. However, reforms were pursued, including those in the product and labour markets, as well as improvements to the policy frameworks for both fiscal and monetary policy. Caballero et al (2004) argue that country trust is an important element in making the Australian dollar an internationalised currency. What are we saying here? Steadfast commitment to reforms is critical, if only to generate market confidence in a country’s currency.

In the case of India, according to Deputy Governor Gopinath (2009): “Internationalisation of a currency is a policy matter and depends upon the broader economic objectives of the country.” This is the reason why India employed a calibrated approach to the capital account given the obtaining macro imbalances and the current global financial crisis; the sequencing of reforms is indeed very important. Thus, while the Indian rupee is not fully convertible, it is flexible. Consistent with this regime, India adopted full but gradual current account liberalisation.

With the adoption of a flexible exchange rate, India has established an important prerequisite for currency internationalisation. However, internationalisation of the Indian rupee still has a long way to go. The Indian rupee accounts for a very small proportion of total foreign exchange turnover, while its infrastructure for hedging is still emerging.

Will a more aggressive approach in lifting remaining capital controls promote growth, trade and openness, and improve output performance, etc? Or should India further complement this with significant economic reforms? My view here is that, by themselves, policy reforms are useful to the economy. Whether they could/would be likely to lead to currency internationalisation may have to be a secondary consideration. It is an added bonus.

The third issue that I would like to raise is whether currency internationalisation is stabilising or destabilising.

In the case of Australia, there was an initial instability when the government dismantled capital controls and moved to an auction system for debt issuance. But the openness and transparency of the system quickly established government credibility, resulting in higher demand for bonds and lower yields – the ingredients of a stable bond market.

It should be emphasised that the development of a cross-currency swap market is critical for investors to hold a certain currency without taking excessive risk. The development of a cross-currency swap market in Australia can be attributed to its adoption of the following formula:

Deregulated bond market + floating exchange rate – capital controls

= cross-currency swap market

Recent events, not necessarily currency internationalisation, could be destabilising (in terms of output, employment and distribution) if an aggressive policy towards currency internationalisation were pursued. At this time, increased capital account liberalisation may instead increase India’s vulnerability to external shocks and fund withdrawals.

It should be pointed out, though, that a floating exchange rate and open capital account may not necessarily be destabilising, depending on market confidence. However, given the severity of the crisis, the elements of currency internationalisation could contribute to amplification and financial vulnerability.

The fourth issue that I would like to address is whether currency internationalisation poses challenges to the conduct of monetary policy.

For Australia, the floating exchange rate has mitigated the impact of external shocks and minimised output variance. But the nominal anchor disappeared until inflation targeting was adopted, and the inflation target replaced the exchange rate as the nominal anchor.

It can be argued that, based on the Australian experience, currency internationalisation has minimised the terms of trade shocks and, in the process, has helped to maintain an internal balance. With lower pass-through of the exchange rate to inflation, the Reserve Bank of Australia became more tolerant of exchange rate variations and, as a result, it became less interventionist. However, the authorities also lost control over the composition of the balance of payments. Capital outflows initially surged in 1983 but, over time, capital flows have reversed. This was possible only because of sustained policy, institutional reforms and market confidence.

The challenges of an internationalised currency should encourage corporate and financial sectors to smooth significant exchange rate gains and losses.

In the case of India, Gopinath (2009) offers a different view on the impact of currency internationalisation on monetary policy: "Effectiveness of monetary policy may be undermined. For example, OMO effectiveness may be reduced in an environment where both residents and non-residents are free to buy and sell domestic currency especially when the government debt is neither large nor liquid."

India's experience, particularly in 2007, has demonstrated that volatile capital flows could complicate monetary policy. Lack of developed financial markets, especially in emerging market economies, could not effectively prevent some spillover effects to the real sector.

It is worth emphasising that, without the ongoing global financial challenges, a floating exchange rate and liberalised current/capital account may not necessarily be destabilising or complicate monetary policy. If complemented by confidence-boosting measures, such as market and institutional reforms and the development of financial markets, these elements could, in fact, offer a market-based stability solution.

Finally, let me discuss the vision for Australia and India. For Australia, currency internationalisation has worked. In fact, it has helped to manage the economy, spurred financial market development and facilitated subsequent reforms. I should say that Australia will no doubt marry the elements of currency internationalisation for another 25 years. For India, its courtship with currency internationalisation is expected to continue (hopefully not for the next 25 years!). Thus, we need to allow romance to blossom in its own time!

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Currency internationalisation: analytical and policy issues

Hans Genberg[1]

1. Introduction

The special role of the US dollar in the international monetary system has fascinated politicians, economists and journalists, as well as members of the general public. General de Gaulle complained about "the exorbitant privilege" associated with the role of the dollar as a reserve currency, and others have spoken about the "hegemony of the dollar" to conjure up notions of power and control related to the widespread use of the dollar in international transactions.[2]

When the euro was introduced, there was much talk about how it might challenge the role of the dollar, and predictions have been made about when the euro will overtake the dollar as the premier official international reserve asset.[3] More recently, with the emergence of China as a major economic power, the possibility that the renminbi will become a major international, or at least regional, currency has been mentioned.[4]

Viewing currency internationalisation as a race between competing currencies raises at least two issues: what determines the evolution of the international use of a currency, and whether there is a case for policy interventions to promote such use. In this paper, I will attempt to address the second of these issues. To anticipate one contention of what follows, I will argue that authorities should not focus their attention on climbing the currency internationalisation charts. Instead, they should consider the pros and cons of policies and institutional changes that may pave the way for the private adoption of the currency in international transactions. The reason for this is that full internationalisation of a currency will not come about unless a certain number of prerequisites are met. Arguably, the most important of those is that there be no restrictions on cross-border transfers of funds and no restrictions on third-party use of the currency in contracts and settlements of trade in goods or assets, or on assets denominated in the currency in private or official portfolios. Other prerequisites are also important, such as the existence of a deep and dynamic domestic financial market, a well-respected legal framework for contract enforcement, and stable and predictable macro and microeconomic policies

Most of these attributes are, without doubt, desirable in their own right, but in respect of complete freedom of international capital movements, reservations have been made, because of its alleged potential contribution to macroeconomic instability. Hence, before

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[1] Executive Director, Hong Kong Monetary Authority. The opinions expressed in this paper are those of the author and do not necessarily reflect those of the Hong Kong Monetary Authority.

[2] There exists a vast literature on the evolution of reserve currencies as well as other aspects of international currencies. Eichengreen (2005) provides a valuable historical perspective. It is not the purpose here to provide yet another account of the evolution of thought on this topic. Instead, an attempt is made to focus the discussion on the implications for public policy towards currency internationalisation.

[3] See Chinn and Frankel (2008) for an assessment of the role of the euro relative to the dollar in official international reserves. Moss (2009) provides a broader assessment.

[4] Li and Liu (2007), Chen et al (2009).

considering steps to attempt to internationalise a currency, policymakers need to take a stance on the desirability of achieving capital account convertibility.

Of course, even if the prerequisites are met, there is no guarantee that currency internationalisation will spontaneously follow. Economies of scale in the use of an international currency, be they due to so-called network externalities or other causes, suggest that the world can sustain only a limited number of international currencies.[5] This then raises the question of whether authorities in a jurisdiction should take steps to promote the internationalisation of the currency it issues. Answering this question requires both an assessment of the size of the benefits of currency internationalisation per se – ie of the benefits that go beyond the establishment of the prerequisites – and a view on whether there exist externalities which imply that the actions of the private sector alone are not sufficient for the economy as a whole to reap the full benefits of currency internationalisation. My own assessment is that the case for policy intervention focused explicitly on promoting the internationalisation of a currency is not overwhelming.

My analysis will start by recalling briefly the main features, benefits and costs of currency internationalisation as identified in the literature. I will examine the nature of the alleged benefits and argue that, in some cases at least, they are not as self-evident as might appear at first sight. I will then turn to the question of whether there is a case for policy intervention, focusing first on the issue of international capital mobility before asking whether public policy should actively seek to promote the international use of a currency.

A separate section is devoted to a discussion of the number of international currencies there could be, and what role there might be for regional currencies. Here, I hypothesise that changes in the international payments infrastructure will make it increasingly possible for several international currencies to coexist. As a consequence, any exorbitant privilege of being the world's dominant currency is likely to be a thing of the past.

2. Currency internationalisation: a brief review of the facets, benefits and costs

I start with a review of the main aspects of currency internationalisation as identified in the literature. Kenen's contribution to this seminar already contains the main arguments, which allows me to be very brief.[6] Perhaps the most visible aspect of the internationalisation of a currency is when it is readily and frequently used in transactions among non-residents outside the jurisdiction where the currency is issued. Examples are the quotation and payment of real estate in some countries using US dollars, the use of US dollars by tourists in countries in which it is not the legal tender, and the payment of illegal drug transactions outside the United States with bundles of US$ 100 bills, to mention just a few. The benefit to the issuing country from this type of currency internationalisation is the seigniorage gains associated with the additional demand for the physical currency. The benefit to the user includes a relatively high real value of a readily accepted note (eg the $100 bill), the widespread international acceptance of the currency for transactions, and the relative stability as a store of value.

A second and more subtle aspect of the international use of a currency is in the denomination and invoicing of international trade. Grassman's Law (the idea that the invoicing currency in international trade tends to be that of the exporting country)

[5] Section 4 discusses this issue further.

[6] Kenen (2009).

notwithstanding, a disproportionate amount of world trade tends to be denominated in US dollars, especially when the trade involves jurisdictions whose currencies are not fully convertible, thus making the hedging of exchange rate risk more difficult. It is often suggested that this practice confers a benefit on US exporters and importers in that they face lower currency risk. Below, I will contend that this argument is less general than it appears at first sight.

Third, international borrowing and lending may be denominated in a currency which is different from that used in the jurisdiction of either the borrower or the lender. This may be referred to as a case of full internationalisation of a currency as far as asset trade is concerned. We may refer to partial internationalisation when a borrower is able to denominate bond issues sold to foreign investors in the borrower's currency, but where this currency is not used between third parties. The nature and distribution of the gains associated with full and partial currency internationalisation in the sense just defined are related to both the potential reduction in borrowing costs due to the larger size of the market for debt denominated in a particular currency and to the potential diversification gains. As these gains are intimately linked with those that obtain from freedom of international capital movements (regardless of currency denomination), I will discuss them in some detail in a subsequent section.

A final aspect of currency internationalisation relates to its inclusion (or more precisely the inclusion of assets denominated in the currency) in official reserve holdings. This differs from the previous aspect mainly because of the nature of the lender, but there also seems to be an element of status involved, at least if one judges by references to rankings of currencies in terms of the proportion they account for in official reserves, and by studies which focus on whether and when a currency might overtake another in the ranking. Of course, the focus on official reserve holdings may also be due to the fact that relatively accurate data on such holdings are available, whereas they are not for holdings in private portfolios.

Countries have, at times, tried to discourage the use of the domestic currency internationally because of the perceived costs that may be associated with such use. For example, during the time when the Deutsche Bundesbank and the Swiss National Bank focused their monetary policy strategies on the control of monetary aggregates, it was feared that greater international use of the Deutsche mark or the Swiss franc would render the demand for money less stable and therefore complicate the setting of the appropriate target growth rate for the supply. In a context where policy is focused on setting a short-term interest rate, the concern for the stability of the money demand is of less relevance. However, it may be argued that international use of the currency could render the exchange rate more volatile and therefore complicates the task of finding the appropriate level of the policy interest rates. I will argue below that both of these concerns have more to do with removing restrictions on the international mobility of capital than with currency internationalisation in the strict sense.

The same is true, I would argue, for a second cost sometimes ascribed to currency internationalisation – especially that which is associated with international bond issues – namely, that domestic interest rates would become more dependent on external factors. This should, I contend, be analysed primarily in relation to the freeing-up of international capital flows.[7]

[7] The concern over external influences on domestic interest rates has recently been directly linked to official reserve holdings and, in particular, the investment strategies of sovereign wealth funds. It is debatable whether official portfolio management strategies give rise to more interest rate uncertainty than those of the private sector. Be that as it may, I will not pursue this topic further here.

3. Analytical and policy Issues

In the previous section, I alluded to two issues on which I believe there is some ambiguity in the literature. The first relates to the significance of the denomination of trade for the benefits of currency internationalisation and the second, and more important issue, concerns the distinction between freedom of movement of capital and currency internationalisation. In this section, I discuss these issues in turn, before moving to the question of whether there is a case to be made for policy intervention to promote the internationalisation of a currency.

3.1 Currency denomination and invoicing of trade

Much of international trade is denominated and/or invoiced in US dollars. This is the case even for trade which does not involve the United States either as a buyer or as a seller. What are the implications of this widespread use of the US dollar? They are not as straightforward as might be imagined at first sight. Consider, first, the case of trade involving the United States. It might be thought that when US exports or imports are priced in US dollars, the corresponding US firm will benefit because it will not face any currency risk. This is an incomplete argument for at least two reasons. First, even if a good is priced in US dollars, it is not necessarily the case that the price is *fixed* in US dollars and unresponsive to movements in the exchange rate. The clearest example of this may be trade in crude oil. On the world market, oil prices are typically quoted in US dollars, but when the US dollar exchange rate changes, the US dollar price of crude reacts almost immediately. In other words, the price of oil measured in US dollars is not necessarily more stable than the price measured in euros simply because it is quoted and invoiced in the former currency. Second, what matters for the exporter is presumably not the volatility of prices in domestic currency but the volatility of profits. Hence, if the price is fixed in terms of the exporter's currency, and the quantity demanded by the importer reacts to changes in the exchange rate, then it is uncertain how the total revenue and profits will evolve.

Even the effect of invoicing of trade in US dollars is not unambiguous. True, when an invoice specifies the price in US dollars and the quantity traded, then any exchange rate changes that intervene between the signing of the invoice and the payment for the goods will give rise to some exchange rate risk for the party of the transaction not using the dollar as its base currency. This risk can of course be hedged, but this is costly and it is therefore often asserted that the non-US trade partner is at a disadvantage. However, the cost of insuring against exchange rate fluctuations does not necessarily fall on the entity that actually pays for the insurance contract. It is well known that the incidence of a tax does not necessarily fall on the economic agent that actually collects the tax and pays it to the government. The same is true here. The cost of insuring against currency fluctuations may, in principle, be borne by the importing firm or the exporting firm regardless of the currency of invoicing, as the cost of insurance may already be included in the quoted price. Whether it is depends on the relative bargaining powers of the two parties to the transaction.

Consider now the case of trade between two partners, neither of whose home currency is the US dollar. In this case, trade costs associated with settlements and hedging will be larger, to the extent that they do not occur bilaterally but involve the US dollar as a vehicle currency. As before, whether the exporter or the importer bears the increased costs depends on their relative bargaining power. If the foreign exchange aspects of this trade could be handled bilaterally without going through the dollar, the costs could be reduced, provided that the transaction costs on this bilateral market were less than twice those of the markets involving the vehicle currency. This is, of course, the crux of the notion of the network externalities associated with the use of a vehicle currency, namely, that the increased volume of trading leads to lower per-unit transaction costs.

I conclude from this discussion that denominating, invoicing, and settling trade in a vehicle currency does indeed lead to a reduction in trade costs for trade involving the country in

which that is the home currency. But it will also reduce trade costs for trade between third parties because of the savings associated with the use of a more efficient foreign exchange market involving the vehicle currency. The policy implication of this, therefore, is not that a country should mandate the use of its currency in trade, as this may just increase trade costs if its foreign exchange market is not sufficiently well developed. On the other hand, supporting the development of the local foreign exchange market is useful in its own right and may lead exporters and importers to change the way they denominate, invoice, and settle trade.

3.2 Currency convertibility versus currency internationalisation

Comprehensive international use of a currency, which I have referred to as full currency internationalisation, presupposes the absence of restrictions on international financial transactions using that currency. The reason for this is that competition between alternative currencies will eliminate those in which transaction costs are too high. Large-scale issuance of financial instruments requires the existence of liquid markets in which secondary market transactions can take place at low cost. In addition, well-functioning markets must make it possible to hedge currency and credit risks. Limits on the convertibility of a currency for international capital account transactions are likely to raise the costs to the point where it is not profitable to denominate asset trades in that currency.

Even partial currency internationalisation is likely to require substantial freedom for capital account transactions. The ability to issue bonds in one's own currency shifts the exchange rate risk to the foreign creditor. It is doubtful whether such bond issues will take place on a significant scale unless a market exists for hedging the currency risk. While it is possible that off-shore markets may develop to serve this function when restrictions on currency convertibility prevent the emergence of efficient onshore markets, the scale and liquidity of the international bond issues will suffer from the constraints on capital account transactions.

It is unlikely that a currency that is subject to restrictions on international financial transactions will voluntarily become widely used, even for trade in goods. This is because such trade still involves considerable elements of a purely financial nature, such as trade financing and hedging of exchange rate risk. If these types of transactions are very costly or not allowed by law, the use of the currency, even in current account transactions, is likely to be limited.

These considerations suggest that before the desirability of currency internationalisation is evaluated, it is necessary to weigh the benefits and costs of liberalising capital movements. This is an issue which has generated a lively debate in recent years, not least because of the experiences in Asia during the 1997–98 crisis and its aftermath. As many of the arguments are by now well known, only the main elements will be noted here.[8]

The case for free movement of capital across borders is an extension of the argument for having well-functioning domestic financial markets. The ability to trade assets with the rest of the world has the potential to increase the efficiency of resource allocation. International borrowing and lending enhances the possibility for international risk-sharing, leading to smoother consumption streams, and it makes it possible to take advantage of investment opportunities without altering consumption patterns. In addition, two-way asset trade increases the scope for portfolio diversification taking advantage of the non-perfect synchronisation of asset price movements across jurisdictions. Exposure to competition from foreign suppliers of financial services may also lead to efficiency improvements in domestic financial institutions.

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[8] See Committee on the Global Financial System (2009) for a recent overview.

While acknowledging these efficiency gains, a number of economists and policymakers have cautioned against removing all controls on capital flows lest it lead to macroeconomic instability. The concern is that sudden starts and stops of capital flows will lead to changes in the exchange rate, interest rates, or domestic financial conditions more generally, thereby increasing volatility in domestic output and real income.

This is not the place to take a stand on what the net effects of liberalising capital movements are, as this is likely to depend on a number of country-specific factors such as the health and efficiency of the domestic financial system, the sophistication of legal and regulatory institutions, and the size of the economy. The point of the discussion is simply to indicate that free movement of capital is distinct from currency internationalisation and must precede it. For this reason, it is premature to discuss policies to promote currency internationalisation before it has been decided that restrictions on capital account transactions should be removed. Furthermore, an evaluation of the benefits of currency internationalisation must take, as the starting point, a situation of full financial integration of the economy with the rest of the world.

3.3 The incremental benefits of currency internationalisation

To discuss the incremental benefits that a country might reap from internationalisation of its currency over and above those that stem from its integration into the world financial market. I will start by comparing simple financial integration with what I have called partial currency internationalisation and then proceed to considering the case of full currency internationalisation.

When I refer to a country (country A, to facilitate reference) moving from simply being fully integrated in the world financial market to having its currency partially internationalised, I mean a situation where residents of country A can not only borrow and lend internationally in the dominant international currency, the dollar at present, to a situation where country A can issue debt denominated in its own currency on the world market. This opens three new avenues for potential welfare gains. First, it makes it possible for foreign residents to include liabilities of country A denominated in country A's currency in their portfolios, which should increase the total demand for such securities. The required return for holding them should fall, constituting a gain for country A. The gain for the rest of the world is represented by the greater choice of assets in which it can invest. Second, a larger pool of investors should increase trading in the secondary market for country A's securities, making it more liquid, thereby reducing the price impact of demand shocks. Third, being able to borrow internationally in their own currency reduces the likelihood of currency mismatches on the books of domestic firms.[9]

At the same time, the interest rates on country A's liabilities are now determined more directly in the world capital market, which increases the sensitivity of domestic financial conditions to developments in the rest of the world. Whether this is to be considered a positive or negative development is really the same issue as whether increasing capital account liberalisation has a positive or negative effect on the domestic economy. Judging this aspect of currency internationalisation is therefore just an extension of evaluating the desirability of capital account convertibility.

[9] It could be argued that liabilities denominated in the international currency could be hedged in the forward or swap markets, which would make it possible to avoid currency mismatches even if it was not possible to source funds denominated in the domestic currency on the international market. But in this latter case, it is unlikely that a liquid forward or swap market would exist in the first place.

What about moving from partial to full currency internationalisation, ie to a situation where third parties are using the currency of country A in financial contracts? The third parties must obviously find this profitable, essentially because it would expand the asset and liability universe, and hence bring potential diversification gains, otherwise they would not do it. For country A, the increased international use of its currency would expand the size of its foreign exchange market, make it more liquid and reduce transaction costs for both trade in goods and assets.

What can be said about the relative size of the benefits associated with financial integration, partial currency internationalisation, and full currency internationalisation? I conjecture that the greatest efficiency gains will come from the first of these, ie the opening of the country's financial markets to those of the rest of the world. Next in importance will be the gains associated with the ability to issue debt in the international market that is denominated in the home currency. But this remains conjecture, as I now turn to the question of whether the gains from currency internationalisation are sufficient to make a case for policy intervention focused on this goal.

3.4 A case for policy intervention?

In view of the benefits that are associated with the international use of a country's currency, what, if anything, should policymakers do to promote it? The literature suggests that economic size, the sophistication of the domestic financial market and stable macroeconomic policies (especially low inflation) ought to be important determinants of currency internationalisation, and empirical evidence is generally supportive. As these attributes are desirable in and of themselves, they should arguably be pursued for their own sake, no matter what their effect on currency internationalisation.

What about more directly focused policies? In general, whether or not there is a case for public policy to influence private sector choices depends on the existence of externalities or spillover effects that render the market-determined outcome inefficient. What might these externalities be in the context of currency internationalisation? Recall that one of the benefits of currency internationalisation is that it may help reduce the currency mismatch of domestic debtors if it makes it possible for them to issue domestic currency denominated debt abroad. As such, it could have a positive impact on domestic financial stability in general, which would then represent a positive externality justifying policy intervention. This intervention could, for example, take the form of regulatory measures that would make it more attractive for domestic financial institutions to issue domestic currency denominated debt abroad.

Decreasing cost of establishing an international market for domestic currency denominated debt could constitute another potential justification for government intervention. Initially, high transaction costs and limited market liquidity may constitute a hurdle for the development of an offshore bond market denominated in the domestic currency or an onshore market for domestic currency bonds issued by foreign borrowers. Official support for the establishment of such markets may then be justified to the extent that it succeeds in increasing liquidity and reducing transaction costs. Such support may take the form of backing the creation of trading platforms or allowing foreign issues denominated in the domestic currency to be used as collateral in discount window operations with the central bank.

While these examples show that it is possible to find justifications for government assistance to currency internationalisation, it should be clear that any such assistance should be designed to align private and public benefits. This would seem to rule out more invasive measures aimed at mandating the use of the domestic currency in international transactions. Such attempts might well increase the cost of international transactions for domestic economic agents, and may even backfire, as such decrees may be seen as a reversal of financial openness which is a sine qua non for currency internationalisation to take hold in private sector transactions.

4. How many international currencies can there be?

Is it possible to have more than one international currency? If so, what about three, four, five, or 10 international currencies? I am referring here to what I have called fully internationalised currencies, namely those which are used by third parties in some of their financial and non-financial transactions. Empirical investigations that measure currency internationalisation by the share of official reserve assets denominated in a particular currency implicitly acknowledge that there can be several international currencies. On the other hand, some theoretical arguments relying on decreasing cost, for example due to network externality effects, to the adoption of a currency in international transactions suggest that in a stable equilibrium there will be only one winner. So what is the countervailing force? I conjecture that it is the gain from diversification. Borrowers as well as lenders may find it useful to be able to diversify currency risk by issuing or holding assets that are denominated in different currencies. If this is right, then the transaction cost reduction associated with having only one international currency could be more than offset by the diversification gains from having several.

Let us think of the average cost associated with the use of a currency as a negative function of that currency's market share in international transactions. If there are no benefits from diversity, the currency would become the only international currency. But let us suppose that there is some benefit from diversity: then it is possible to have an equilibrium where more than one international currency will be used. If the average cost curve becomes sufficiently flat, even when the domain covered by the currency is substantially smaller than the total value of international transactions, there may be room for several international currencies. It does not strike me as far-fetched to posit that improved transaction and payment technologies have led to the exhaustion of most economies of scale at a relatively moderate size of transaction volumes relative to the total current volume of international transactions. The situation may have been different before the advent of large-scale electronic trading, when trades were conducted by telegraphic transfer. At that time, the simple image of network externalities, in which one would want to trade in the currency that everyone else was using, might have been accurate. But now, international bond traders sit in front of screens and are actually trading in many currencies almost simultaneously. The sophisticated trading platforms have made the networks much wider than before, and the international system is therefore able to support more than one fully internationalised currency.

It is therefore quite possible that the euro and the dollar, for example, will coexist in the future without any cataclysmic event leading to the replacement of the dollar as *the* international currency. In fact, we might very well be entering an era where several international and regional currencies will subsist as transaction costs decline due to improved trading platforms and payment infrastructures.[10]

If we consider what I have called partially internationalised currencies, it is even more likely that many currencies will enter that category, in the sense that many countries will be able to issue international bonds denominated in their own currency. The same principle would seem to apply here; improved transaction technology has reduced the natural advantage of the once dominant currency, so that diversification gains are more likely to offset it. What prevents most currencies from becoming fully internationalised is the size of the country and the size of its financial market.

Looking at Asia, various degrees of currency internationalisation are already present in the region. The yen, the Australian dollar and the New Zealand dollar are already used

[10] Eichengreen (2005) reaches a similar conclusion.

extensively in international transactions, even between third parties.[11] Other currencies in the region are also used to various extents. Could one currency become dominant? I would argue that this is essentially a question of the size of the domestic financial market involving that currency, provided that the prerequisites that I have mentioned above have been met. This suggests that the renminbi could one day become a truly international currency. Should the other countries in the region, or other countries in the world, worry? In other words, will an internationalised renminbi confer an "exorbitant" privilege on China? I would argue not.

The term "exorbitant privilege" was coined at a time when exchange rates were mostly fixed against the US dollar, which therefore played a particular role at the centre of the system. This was an advantage for the United States in that it could set its monetary policy as it saw fit for internal purposes, whereas other countries had to adjust their policies to maintain the exchange rate pegs. The present situation is different, at least for countries which have adopted monetary policies focused on domestic objectives and have allowed their exchange rates a substantial degree of flexibility. They do not have to absorb large amounts of liabilities of the countries with internationalised currencies unless they choose to do so. The gains from having an internationally used currency are certainly present, but they are not, in my opinion, exorbitant, nor are they at the expense of other countries.

5. Concluding remarks

Capital account convertibility and currency internationalisation are two distinct concepts. Substantial international use of a currency in merchandise trade or in the denomination in bond issuance presupposes the absence of significant controls on capital account transactions. Liberalisation of such transactions must therefore logically precede attempts to increase the international role of a currency.

The benefits from currency internationalisation per se, ie those that go beyond the benefits of capital account liberalisation, can be linked to diversification gains associated with a wider investor base, risk management opportunities as a result of the possibility of issuing debt on the international market in one's own currency, and lower transaction costs resulting from a larger size of the market involving the domestic currency. Although these gains are genuine, it is an open question whether public policy should attempt to promote the internationalisation of the domestic currency beyond establishing preconditions such as a deep and dynamic domestic financial market, a well-respected legal framework for contract enforcement, and stable and predictable macro and microeconomic policies. The evolution of the international role of the euro, the yen, the Australian dollar and the New Zealand dollar shows that currency internationalisation does not depend on special government encouragement but will take place spontaneously when the required preconditions are met and if it is to the benefit of economic agents engaged in international transactions.

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[11] See the papers on the Australian dollar (Battellino and Plumb (2009)) on the yen (Tagaki (2009)) as well as the panel presentation by Grant Spencer on the New Zealand dollar.

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Panel discussion

Akinari Horii[1]

Currency internationalisation has been one of my favourite topics of research since the mid-1980s, when I was working in the Monetary and Economic Department at the BIS. Particularly interesting to me has been the topic Hans Genberg discusses in his paper presented to this seminar; the reserve currency or the vehicle currency in the international monetary system or, simply put, the international currency. However, in this regard, Hans and other speakers at this seminar have failed to refer to what I consider to be the best paper ever written about this subject, entitled "The evolution of reserve currency diversification", *BIS Economic Papers*, no 18, by me. Besides this paper, there are other well written papers on this issue. Today, I would like to mention two of them: "Still the lingua franca", published by Jeffrey Frankel in *Foreign Affairs* in 1995, and "The dollar yesterday, today, and tomorrow", a George W Stocking memorial lecture given by Charles Kindleberger in 1985. I would like to organise my exposé along the lines of the arguments in those two papers.

The four key advantages for a country with an internationalised currency are: (i) the convenience for the nationals of the currency; (ii) the business opportunities for banks and other financial institutions; (iii) seigniorage; and (iv) political power and prestige. Peter Kenen and a few other participants in this seminar have made similar remarks to, but somewhat different from, this list of advantages. For each point, there are a number of issues that must be discussed in detail, including those identified by Hans several minutes ago.

Yesterday, Atchana Waiquamdee cast doubt on all these advantages for emerging economies, by examining the costs associated with currency internationalisation. In addition to the costs she pointed out, I would like to add a few more: (i) the direct expense necessary for offering a reliable means of payment, eg expenses for banknote counterfeit deterrence capabilities; (ii) the infrastructure to support a wide and deep financial market, eg good payment/settlement systems, bank supervision and law enforcement capabilities; and (iii) the political and economic independence of the monetary authorities from both domestic and international pressures, as discussed by Peter Kenen and Yung Chul Park yesterday.

All this is related to the factors that are necessary to support the international currency. Jeffrey Frankel pointed out four fundamental factors in his paper: (i) the economic size of the country; (ii) developed financial markets; (iii) confidence in the value of the currency; and (iv) inertia. In his nice analogy with the international use of the English language, he said: "Nobody would claim that English is particularly well suited to be the world's lingua franca by virtue of its intrinsic beauty, simplicity, or utility. […] One chooses to use a lingua franca, as one chooses a currency, in the belief that it is the one others are most likely to use." Charles Kindleberger addressed the same issue a decade earlier, when he said: "Worldwide use of the dollar is equivalent of worldwide use of English, or perhaps American. […] The case for the continued functioning of the dollar is the need for a widely-used world currency and the failure of a challenge to appear."

Nonetheless, Kindleberger also said that the long-term outlook for the US dollar remained negative because of small savings and a large federal budget deficit, which, in his view, reflected "basic political unwillingness to tax to meet expenditures that the public insists on". This aspect of the US economy looms large once again. I am speaking of sound, effective

[1] Assistant Governor, Bank of Japan.

financial markets on Wall Street as well as confidence in the currency being tested. Now that the international turmoil covers both US and UK financial markets and, though to a lesser extent, continental European markets, international financial intermediation will take a very different form from the one we have seen over the past decade.

With respect to the international roles of a currency, let me remind you of our role as central bankers. We are responsible for guarding the integrity of money. As long as the integrity of money is maintained, or even enhanced, the money has a natural appeal to its holders, both actual and potential, domestic and international. If the soundness of the system becomes questionable, and the payment/settlement functions become uncertain, however, the integrity of the currency will be damaged. If the functions as a unit of account and store of value become unstable, the integrity will also be lost, as will the appeal of the currency as an international currency. In this regard, we are currently experiencing highly uncertain conditions because of the financial turmoil as well as the rapidly growing budget deficit in the United States. If this situation continues in the long term, we would do well to consider alternative strategies to preserve the integrity of money.

This involves additional implications for the Asia-Pacific region. Six years ago, EMEAP began its innovative ABF (Asian Bond Fund) project, with the collaboration of the BIS. It was launched with a view to playing a catalytic role in promoting a financial intermediation to link the ample savings with the rich investment opportunities in the Asia-Pacific region. Under the current circumstances, where the international financial scene is unsettled, we may have to explore further how to follow up this process.

Thank you.

The recent experience of the Korean economy with currency internationalisation

Gwang-Ju Rhee[1]

1. The pros and cons of Korean won internationalisation in the light of the recent financial crisis

Since the late 1980s, Korea has continued making institutional improvements aimed at providing the basis for Korean won internationalisation, in order to enlarge its benefits. Faced with the recent global financial turmoil, however, the internationalisation of the Korean won may be a two-sided coin. In other words, while the need for internationalisation has increased, its side effects cannot be underestimated.

The pros of Korean won internationalisation

Korean won internationalisation would have various economic benefits. It would enable domestic economic agents to avoid foreign exchange risk and save on foreign exchange transaction costs, help in the development of domestic financial and foreign exchange markets, reduce the need for external payment reserves, and generate seigniorage profits. Moreover, given the ongoing global financial crisis, the merits of internationalisation of the won may increase further in the long term.

First of all, if the Korean won were internationalised, the exchange rate risk of private economic agents, including exporters and importers, could be reduced. In particular, recent events in the Korean foreign exchange derivatives market such as the "knock-in/knock-out option"[2] and the "snowball" could be better managed. Moreover, importers would not need to pass-through the additional costs of currency depreciation to consumers, and thus inflationary pressures could be mitigated.

The second benefit of Korean won internationalisation is that the Korean economy would be more resilient to external shocks. For example, issuance of won-denominated overseas securities could help to reduce the possibility of double mismatches in currency and maturity. In this way, it could effectively respond to sudden capital outflows and strengthen its resilience to the shocks. That is, it could reduce the risk of currency mismatch from the burden of "original sin" inherent in emerging market economies, which could thus help to reduce the side effects of sudden foreign capital flows, such as boom-bust cycles or systemic sudden stops in the global financial markets. Moreover, securities issued overseas usually have long-term maturities (more than one year), and rollover risk, particularly during periods of financial turmoil, would be lessened.

Third, Korean won internationalisation would improve foreign exchange liquidity conditions and enhance the capital soundness in the financial sector. This would also contribute to a deepening of domestic financial markets through the introduction of new financial products.

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[1] Deputy Governor, Bank of Korea.

[2] An exotic currency option, named KIKO (knock-in/knock-out), was structured with buying one put option and selling two call options. Since 2006, KIKO has been widely used by Korean small and medium-sized enterprises for hedging purposes, as it bears no transaction cost. But the firms involved have suffered huge losses, as the Korean won has depreciated sharply in the wake of the global financial crisis.

In other words, an increase in capital inflows would have a direct and positive impact on foreign exchange liquidity. In addition, the capital soundness of domestic financial institutions would be enhanced through an increase in the issuance of won-denominated stocks. Furthermore, it would promote the introduction of new financial products and facilitate its transactions in the market, thereby contributing to the quantitative and qualitative development of domestic financial markets.

The cons of Korean won internationalisation

Given the ongoing tensions in the global financial market, however, the negative effects of Korean won internationalisation would also increase. On top of that, the Korean economy would be more easily exposed to speculative attacks if the won were internationalised. Amid the turmoil in the global financial market, attaining full liberalisation in the pursuit of currency internationalisation could aggravate capital flow volatility, heightening the chance of speculative attacks on the won. The speculation would, of course, increase the volatility in the financial market, especially in the exchange rate, thereby increasing the uncertainty of the whole economy in a country such as Korea, where external dependence is relatively high. In particular, the exchange rate could become more volatile if foreign exchange funding difficulties and the recession in the real sector were to continue, as in the current situation.

Furthermore, volatile capital flows into and out of Korea might undermine the autonomy and efficiency of monetary policy. Emerging market economies with premature currency internationalisation tend to be more vulnerable to external financial shocks, creating difficulties for monetary policy. In other words, massive capital inflows increase the cost of monetary policy operations and worsen the central bank's balance sheet in the process of sterilisation, while the capital outflows add to the difficulties in coping with the liquidity drain in the domestic financial market and squeeze the real sector economy. Additionally, before achieving a mature financial market, the large capital flows may cause a distortion in the financial market, rather than helping it to develop.

Overall, despite the various benefits of Korean won internationalisation in the long term, the short-term costs of pursuing it at this point in time are relatively large. It should be noted that the effectiveness of financial stability resulting from currency internationalisation would be limited in the current global financial turmoil where the financial market tensions of advanced economies are fast spreading into emerging economies. This reflects the fact that the emerging economies that lie somewhere on the scale between developed and underdeveloped countries face the greatest likelihood of a potential crisis, rather than reaping the full benefits of currency internationalisation.

2. Evaluating the progress in Korean won internationalisation

Developments in Korean won internationalisation

Much progress has been made in Korean won internationalisation, at least in terms of its unit of account. Convertibility and exchange of the won, the entry of the won in physical form in exports/imports, and won deposits by non-residents have all become liberalised. In current transactions, the conclusion of won-denominated transactions, as well as the settlement of transactions in Korean won, have also become liberalised (June 1996). In addition, since January 2006, the authorisation of most capital transactions involving the Korean won has been changed from an approval basis to a reporting basis. In November 2007, the "Plans for enhancing the market-friendliness of the foreign exchange transaction system", which include a plan for Korean won internationalisation, were announced. The measures include the liberalisation of Korean won exports/imports, the upward adjustment of the amount of a non-resident's borrowing in Korean won from KRW 10 billion to 30 billion, and the settlement

of floor capital transactions in overseas exchanges. These areas are considered to have a relatively small impact on the foreign exchange market, but are considered essential for improving the global acceptability of the Korean won.

However, internationalisation of the Korean won as a means of payment or store of value (borrowing, lending, securities issuance) is not fully permitted, and some of the capital transactions must be reported to the government or the Bank of Korea (BoK). In detail, non-residents' Korean won borrowings and securities lendings in excess of KRW 30 billion, capital transactions between non-residents, and securities issuance by non-residents should be reported to the Ministry of Strategy and Finance or the BoK. Additionally, won-denominated current transactions among non-residents using non-residents' Korean won transaction accounts are prohibited. However, won-denominated current transactions between residents and non-residents are permitted, and are available only through non-residents' Korean won transaction accounts. The Korean government will pursue mid- to long-term measures towards internationalisation more prudently, such as lifting procedural restrictions on over-the-counter (OTC) capital trades and won borrowings, and permitting the free settlement of capital transactions in the won.

Table 1

Development in KRW internationalisation by transaction types

(end-2008 basis)

Transaction Types		Details	Extent of Liberalisation
▪ Convertibility of KRW		Unlimited convertibility of KRW	Liberalised
▪ KRW exchange		KRW exchange in Korea and abroad	Liberalised
▪ KRW exports/imports		Cross-border carrying of KRW in physical form	Liberalised
▪ KRW deposits		Non-residents' KRW deposits	Liberalised
▪ Current Transactions		Conclusion of KRW-denominated transactions	Liberalised
		Settlement of current transactions by KRW	Liberalised
▪ Capital Transactions	Conclusion of transactions	KRW-denominated fund procurement by non-residents	Report to the Ministry of Strategy and Finance or the BOK required[1]
	Payment and Settlement	Settlement of capital transactions by KRW	Permitted within a limited scope[2]

[1] Non-residents report to the Ministry of Strategy and Finance for the issuance of won-denominated securities; non-residents report to the BoK for borrowing of over KRW 30 billion. [2] Limited to the payment and settlement of domestic securities and futures investments, and the settlement of floor transactions in overseas exchanges.

The Korean government has chosen Korean won internationalisation as one of its major national goals for the next five years, and has been working on that goal. However, due to the recent deepening of domestic and external financial instability, its policy stance has shifted to a more prudent approach. As a result, the government announced last October that it would postpone indefinitely the second stage of its foreign exchange liberalisation measures.

Current use of the Korean won in external transactions

Thanks to institutional improvements, the use of the Korean won has increased steadily for every type of transaction, although it is not so frequently used by non-residents, except in domestic stock and bond investments.

First, the exchanging of Korean won (in its physical form) for other currencies has increased, due to the increase in overseas travel among Koreans and the entry of foreigners into Korea, but the amounts involved are not that significant.

Table 2

Trends of KRW Imports/Exports

(hundred million won)

Transaction Types		2002	2003	2004	2005	2006	2007	2008
Banks	Exports	514	594	1,199	1,406	1,497	1,512	4,062
	Imports	43	72	281	248	682	1,161	822
Individuals	Exports	5	7	9	7	6	17	14
	Imports	827	559	661	797	837	1,024	736
Korean tourists abroad[1]		535	709	883	1,008	1,161	1,332	1,200
Foreign tourists in Korea[1]		712	475	582	602	616	644	689

[1] In tens of thousands.

Second, use of the won for the settlement of current transactions,[3] such as imports/exports and service transactions, has also been rare. The currencies used in current transaction settlements (in 2008) ranked from the US dollar (83.8%), to the euro (6.4%), and the Japanese yen (6.0%), while the KRW accounted for only 0.1%.

[3] The settlement of current transactions in Korean won is a won-denominated transaction, and is allowed only between parties concerned using non-residents' Korean won transaction accounts. Opening a Korean won clearing account under the name of a foreign financial firm is not allowed.

Table 3

Current Transaction by Settlement Currencies in Korea

(billion dollars, %)

Transaction Types		1996	2000	2002	2004	2006	2007	2008
Trade (A)	USD	228.4 (84.9)	277.5 (82.7)	281.8 (83.8)	417.1 (82.0)	552.1 (78.1)	639.9 (83.3)	791.8 (84.6)
	JPY	21.5 (8.0)	29.1 (8.7)	28.5 (8.5)	46.9 (9.2)	48.5 (6.9)	53.8 (7.0)	61.9 (6.6)
	Euro	–	6.3 (1.9)	19.0 (5.6)	34.5 (6.8)	46.4 (7.0)	59.9 (7.8)	65.7 (7.0)
	KRW	–	–	0.3 (0.1)	0.6 (0.1)	1.6 (0.2)	1.9 (0.2)	0.9 (0.1)
Services (B)	USD	55.6 (78.5)	73.0 (80.6)	74.4 (78.4)	108.1 (79.7)	137.8 (79.1)	173.5 (81.6)	201.4 (80.8)
	JPY	8.6 (12.1)	9.4 (10.3)	7.6 (8.1)	9.7 (7.2)	9.8 (5.6)	11.4 (5.4)	8.7 (3.5)
	Euro	–	0.8 (0.9)	4.7 (5.0)	7.3 (5.4)	12.7 (7.3)	16.3 (7.7)	10.6 (4.3)
	KRW	–	–	0.3 (0.3)	0.6 (0.4)	1.3 (0.7)	2.0 (0.9)	0.6 (0.2)
Current Transactions (A+B)	USD	284.0 (83.5)	350.5 (82.3)	356.1 (82.6)	525.2 (81.5)	689.9 (82.8)	813.4 (82.9)	993.2 (83.8)
	JPY	30.1 (8.9)	38.5 (9.0)	36.2 (8.4)	56.7 (8.8)	58.3 (7.0)	65.2 (6.6)	70.6 (6.0)
	Euro	–	7.1 (1.7)	23.7 (5.5)	41.8 (6.5)	59.1 (7.1)	76.2 (7.8)	76.3 (6.4)
	KRW	–	–	0.5 (0.1)	1.2 (0.2)	2.9 (0.3)	3.9 (0.4)	1.4 (0.1)

Third, non-residents' investment in won-denominated financial products (equities and bonds) has been mostly liberalised, and transactions in this area have been very active. Non-residents' investments in Korean stocks and bonds increased in volume until 2007. Last year, however, they declined sharply due to the global financial crisis. Conversely, Korean won deposits and borrowings, and Korean won securities borrowings, have been small.

Table 4

Trend of Non-residents' Investment By Transaction Type[1]

(trillion won, %)

	2005	2006	2007	2008
Stock Investment	269.9 (37.1)	273.1 (35.2)	325.4 (31.0)	70.8 (27.4)
Bond Investment	3.3 (0.5)	4.6 (0.9)	21.7 (2.6)	37.9 (0.4)
Won Deposit and Money Trust	0.3	0.5	0.6	2.5
Won Borrowings	0.4	0.6	0.7	0.7
Won Securities Borrowings	0.1	0.1	0.7	0.6

[1] Balances at period ends. [2] Figures in parenthesis are the shares in total market capitalisation (in percent).

Fourth, of Korean won foreign exchange transactions between foreign exchange banks and non-residents, non-deliverable forwards (NDFs) and overseas remittances of Korean won have increased every year.

Table 5

Trends of FX Transactions Involving Korean won

(hundred million dollars)

	2005	2006	2007	2008
NDFs[1]	26.1	42.2	65.3	94.3
Remittance of money received from selling real estate in Korea[2]	0.8	0.6	1.5	0.1
Overseas remittance of Korean won[2]	17.1	20.5	25.2	39.6

[1] Volumes of daily transactions (based on new purchases + sales). [2] Based on non-residents' KRW transaction accounts.

Reasons behind the slow progress in Korean won internationalisation

Despite the government's efforts to internationalise the Korean won, in line with its foreign exchange liberalisation measures, use of the won is still minimal. This is because acceptability of the won is below that required for an international currency. This implies that, in order for a country's currency to become internationalised, what is needed goes beyond just the institutional overhaul, such as foreign exchange liberalisation; spontaneous overseas demand for the currency is also inevitably required.

I have outlined below a comparison between Korea and other major economies, in terms of economic size in trade and production, fiscal soundness, external and internal stability of their currency value, degrees of financial market maturity and trade structures. These are regarded as key elements for determining the acceptability of international currency.

First, in terms of economic size, Korea ranked 12th in world trade volume and 13th in GDP (2007 basis). Considering that the currencies of Australia, Switzerland and Hong Kong SAR – which are smaller than Korea in terms of trade and economic size – are more

internationalised, I would say that Korea, to a large degree, meets the conditions for currency internationalisation, in terms of its economic scale.

Table 6

Shares of main countries in world trade and GDP[1]

(2007 basis, %)

	US	Japan[2]	Germany[2]	Korea	Australia	Switzerland	Hong Kong
Trade	11.4	4.7 (6.5)	8.5 (7.9)	2.6	1.1	0.0	2.6
GDP	25.3	8.0 (11.4)	6.1 (5.4)	1.8	1.7	0.8	0.4

[1] Weights in comparison to the world total. [2] Figures in parenthesis show the weights in 1985, when currency liberalisation was actively pursued.

Source: IMF, *International Financial Statistics* and *World Economic Outlook*.

Second, the fiscal soundness of Korea has been strong in comparison to advanced and other emerging economies. The public debt of the Korean government as a percentage of GDP is considerably smaller than those of developed countries such as the United States, Japan and Germany.

Table 7

Public Debt[1] **in main countries**

(2007 basis, %)

	US	Japan	Germany	Korea	Australia	Switzerland	Hong Kong
Public Debt/GDP	63.1	195.5	65.0	32.1	8.9	43.5	12.5

[1] Based on general government.debt.

Sources: IMF, *The State of Public Finances (2009)*; Swiss National Bank; HKMA.

Third, domestic inflation, which shows the internal value of the Korean won, has been broadly stable overall since 2000, but has exceeded those of advanced economies such as the United States and Japan, as well as Australia and Switzerland. The exchange rate of the Korean won against the US dollar, which is an indicator of the external value of the won, has been more volatile than those of other major economies' currencies. It seems to me that the won does not fully satisfy the requirements for an internationalised currency, in terms of the stability of its value.

Table 8

Price and exchange rate movements in main countries[1]

(In per cent)

		2001	2002	2003	2004	2005	2006	2007	2008
CPIs	US	1.6	2.5	2.0	3.3	3.4	2.5	4.2	-0.1
	Japan	-1.2	-0.3	-0.4	0.2	-0.4	0.3	0.7	0.4
	EU	2.0	2.3	2.0	2.4	2.2	1.9	3.1	1.6
	Korea	4.1	2.8	3.5	3.6	2.8	2.2	4.0	4.1
	Australia	6.0	2.9	3.1	2.4	2.4	3.2	3.0	3.7
	Switzerland	1.0	0.6	0.6	0.8	1.2	1.1	0.7	2.4
FX Rates[2]	Yen/Dollar	-11.3	-2.9	8.0	7.2	-1.9	-5.2	-1.2	14.0
	Dollar/Euro	-3.0	5.5	19.6	10.0	0.0	0.9	9.1	7.4
	Won/Dollar	-12.4	3.2	4.9	4.2	11.7	7.2	2.8	-15.8
	Dollar/ Aus. Dollar	-11.0	5.1	20.0	12.9	3.4	-1.2	11.3	1.6
	Swiss Franc/ Dollar	0.1	8.5	15.7	8.2	-0.3	-0.5	4.4	10.9

[1] Annual average. [2] Appreciations (+) or depreciations (-) against US dollar.

Fourth, in terms of financial market development, Korea's domestic financial markets have grown steadily, while also becoming more open externally. However, they are insignificant in terms of trading volume among global financial market transactions and are qualitatively immature with a lack of sophisticated financial products. The daily trading volume in Korean stock and the foreign exchange market, as well as the outstanding of the bond market, are smaller than those of major advanced economies. In particular, the daily trading volume in the foreign exchange market is only one quarter that of Australia, whose economic size is similar to Korea.

Table 9

Main indicators in stock, FX and bond markets

(hundred million dollars)

	US	UK	Germany	Japan	Australia	Switzer-land	Korea
Stock Market[1, 2]	1,921	115	126	160	19	32	43
FX Market[1, 3]	10,303	19,834	1,576	2,658	1,599	2,564	406
Bond Market[4]	251,545	13,842	28,522	94,681	7,525	2,620	18,596

[1] Daily average trading volume. [2] Based on January 2009. [3] Based on April 2007, including transactions with customers. [4] Outstanding of bonds issued at end-Q3 2008.

Source: World Federation of Exchanges and the BIS ("Foreign Exchange and Derivatives Market Activity in 2007").

Fifth, it is generally believed that, the more market dominance a country's exported goods have, the higher the possibility of its currency being used in global trade settlement. Korea exports more goods to regional countries such as Japan, China, and Southeast Asian countries compared to the United States and Europe. If the Korean won were more frequently used for the settlement of regional trade, it would enhance the economic benefits.

Table 10

Destination of Korea's exports

(in per cent)

	2002	2004	2006	2007	2008
US	20.2	16.9	13.3	12.3	11.0
Euro Region	13.4	14.9	14.9	15.1	13.8
Asian Region	47.6	51.0	51.8	50.8	50.7
(Japan)	9.3	8.5	8.2	7.1	6.7
(China)	14.6	19.6	21.3	22.1	21.7
(South East Asia)	11.3	9.5	9.9	10.4	11.7
Others	18.9	17.2	20.1	21.8	24.5
Total	100.0	100.0	100.0	100.0	100.0

Source: Korea International Trade Association.

3. Concluding remarks

Let me conclude my presentation with suggestions for future policy plans.

If the Korean won is further internationalised in the long term, we can expect various benefits. Especially when the world economy is in financial crisis, as is currently the case, domestic businesses and financial institutions would have greater opportunities to secure foreign currency funding, and the impact of global shocks would be eased. Nonetheless, Korean won internationalisation needs to be firmly grounded on global demand for the currency. If we rush to pursue this goal when it remains beyond our power, it might trigger the risk of speculative attack and hamper the autonomy of our macroeconomic policy. We would therefore need to work prudently towards this goal, paying close attention to domestic and global conditions.

In this respect, it will be important for us to focus our economic policies on preventing excessive real economic contraction and promoting macroeconomic stability, thereby inducing a natural improvement in the acceptability of the Korean won in the medium to long term. Implementing further institutional measures for foreign exchange liberalisation and Korean won internationalisation would have to be pursued conservatively, taking into consideration the progress in global financial market normalisation and the recovery of the domestic economy.

In times of global crisis, such as the current one, we need to further strengthen regional currency and financial cooperation in order to establish a foundation for Korean won internationalisation and to maximise its potential benefits. The consolidation of Asian regional cooperation, together with that between advanced and emerging market economies, such as the Korea-US currency swap agreement, would serve as an engine for recovery in overcoming a global economic recession.

To help achieve this, it will be necessary to create efficient ways of promoting the increased use of regional currencies in trade settlement, and of expanding the Asian Bond Fund (ABF) to help further develop Asian bond markets. The volume of Korea's trade with China and Japan accounts for 19.6% and 10.4%, respectively, of its total trade. However, the use of those countries' currencies in Korea's trade settlement is small, due to a less developed hedging market for exchange risk. We therefore need to review the measures to facilitate trading in the won/yen futures market and the possibility of introducing a won/renminbi futures market, making progress towards the establishment of spot markets for those currencies.

In addition, we need to work to lower the possibility of currency crises due to unstable global capital flows and currency mismatches, while also promoting internationalisation of regional currencies. We can do both of these by fostering the further development of Asian bond markets by, for example, expanding the demand for regional bonds through increasing the size of the ABF. Last February, the Korean government decided to lift the withholding tax levied on foreigners when they invest in Korean bonds, thereby expanding the demand for Korean won bonds.

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Panel discussion

Grant Spencer[1]

I am very pleased to be here today, and would particularly like to thank our hosts, the Bank of Korea and the BIS, for their excellent hospitality.

Today I would like to talk about the New Zealand experience, and try to draw some broader conclusions based on our experience for the issue of currency internationalisation.

During the conference, we have heard many different views on currency internationalisation, and I feel that to sort out these differences, we need to make a very clear distinction between capital account liberalisation on the one hand, and currency internationalisation on the other. This is the point that Hans Genberg has been making in his comments.

The important thing here is that capital account liberalisation is a policy action, whereas currency internationalisation is potentially a by-product of that policy action, but is not a policy action of its own accord.

The New Zealand dollar: an internationalised currency

The New Zealand dollar is not an international currency in the sense that it is not used broadly in current account transactions, nor is it an international reserve currency. But in line with Professor Kenen's definition, it is an internationalised currency. The factors contributing to that have been:

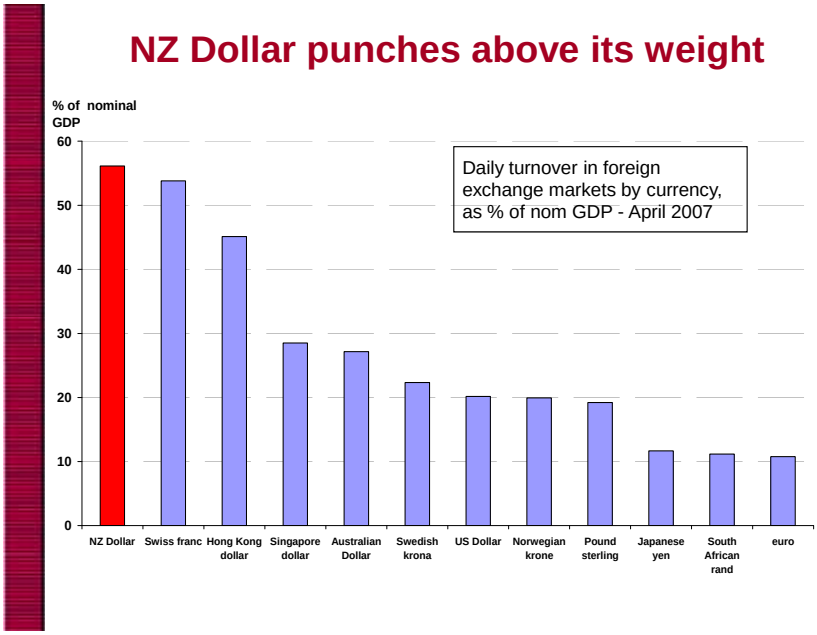
- New Zealand has had 20 years of open financial markets and capital account convertibility.
- It has had a freely floating currency since 1985.
- New Zealand is very reliant on foreign savings and has a relatively high debt to GDP ratio.
- The hedging of foreign exchange balance sheet risk has become the norm in New Zealand, and this has been underpinned by the Reserve Bank's prudential policy. As a result of these factors, currency internationalisation has flowed on.

Now, in observing the currency internationalisation of the NZ dollar, what have we seen?

First, as shown in Figure 1, the New Zealand dollar punches above its weight when it comes to liquidity. The turnover in the NZ dollar, as a percentage of nominal GDP, is actually higher than for the currencies of most other countries – even currencies such as the Swiss franc and the Hong Kong dollar. As a result, daily turnover, as seen in the figure, has recently been 55% of annual GDP.

[1] Deputy Governor, Reserve Bank of New Zealand.

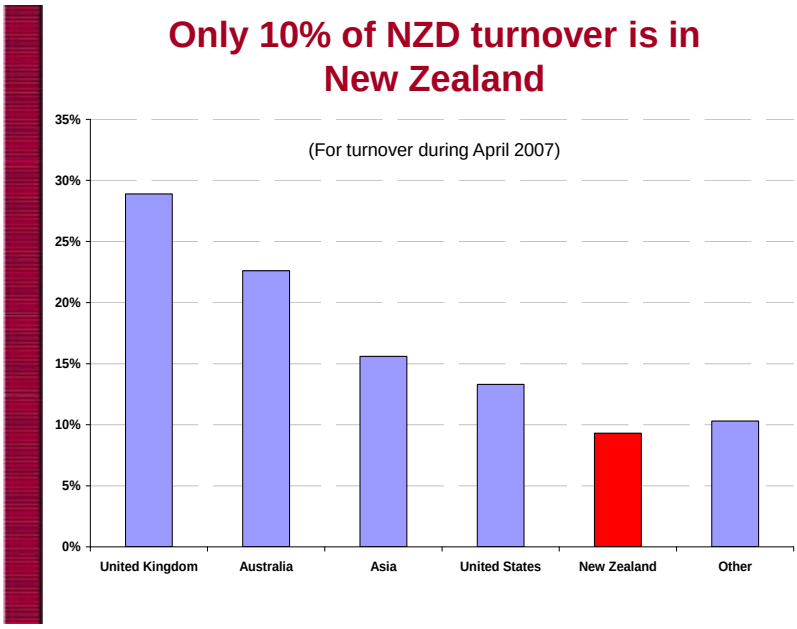
Figure 1



Source: BIS.

We see in Figure 2 that only 10% of this high volume of turnover actually occurs in the New Zealand marketplace itself. Most trading actually occurs in London, followed by Australia, then Asia, etc. This demonstrates that, if a country is hoping to internationalise its currency at some point, it will have to let go of its currency, in the sense that it will need to allow it to be freely traded in global financial markets.

Figure 2



Source: BIS.

A further characteristic of the NZ dollar as an internationalised currency, as shown in Figure 3, is that a large proportion of NZ dollar debt securities are issued offshore. In fact,

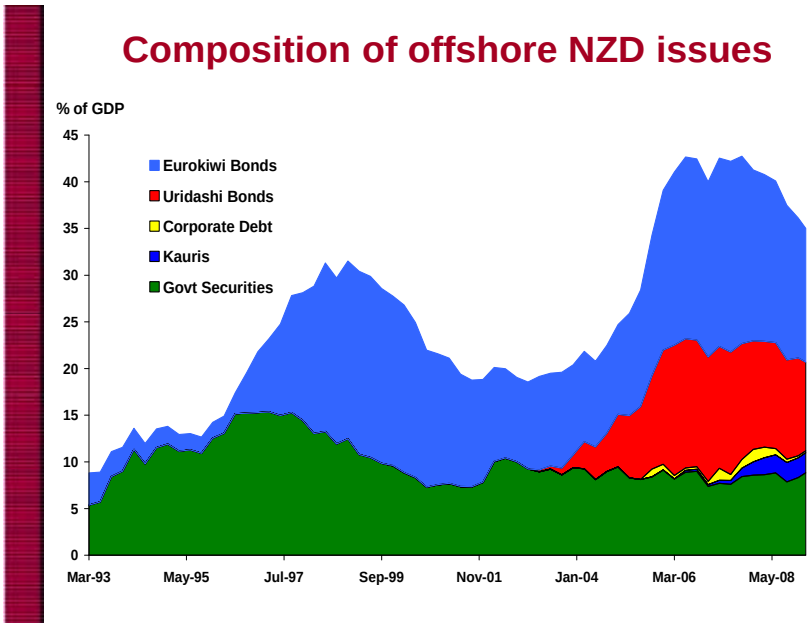
only about 35% of NZ dollar debt securities are actually issued onshore; the proportion issued offshore is greater than for all other EMEAP economies including Hong Kong SAR. This is very much in line with Professor Kenen's definition of an internationalised currency.

Figure 3

Source: BIS.

Moving on to Figure 4, we see here the composition of the offshore NZ dollar debt issues. Clearly, this shows an upward trend, but also quite a cycle, so we see that the proportion of NZ dollar debt issued offshore varies greatly according to the credit market cycle.

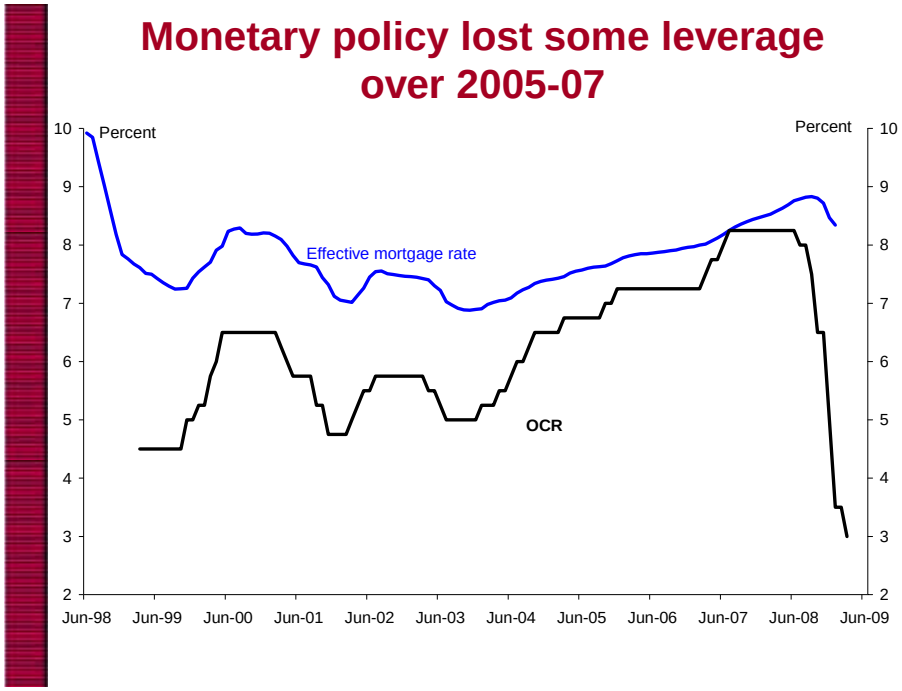
Figure 4



Source: Reserve Bank of New Zealand.

The credit market boom from 2003 to 2007 saw a very rapid growth in NZ dollar debt issues offshore. Since then, due to the international credit crisis, the volume of New Zealand's outstanding debt has been tending to reduce as interest differentials are reduced but, more importantly, risk appetite has diminished among the international investment community.

Figure 5



Source: Reserve Bank of New Zealand.

New Zealand's experience with open capital markets and capital account convertibility

Looking now at New Zealand's experience and the pros and cons of open capital markets and a convertible currency: first, it has been a generally positive experience overall. On the plus side, we have seen that open capital markets and capital account convertibility have facilitated efficient resource allocation in the New Zealand economy. It has promoted adjustment to external shocks and facilitated an independent monetary policy. On the negative side, there is no doubt that the exchange rate can, at times, overshoot in response to shocks. Hence, we do sometimes have unnecessary or perverse adjustments in the traded sector. But, overall, I would say that having an open capital market and an open capital account in New Zealand has been a positive experience, and I don't think that anyone would regret the policy decision that was made in this area back in the mid-1980s.

Experience with the New Zealand dollar as an internationalised currency

Overall, this has been a net positive experience, but it has certainly had some adverse aspects as well.

On the positive side, currency internationalisation has facilitated risk management, particularly the hedging of foreign exchange risk on balance sheets, both of the corporate sector and of the banking sector. It has allowed separate management of foreign exchange and credit risks and has maximised the scope for investors and borrowers to choose options so as to lower the overall cost of capital in New Zealand. This separation exploits comparative advantage in capital markets. On the negative side, the main drawback of currency internationalisation is a lessening of leverage in monetary policy, particularly when risk premia are low, as is the case during a credit market boom. This reduced independence was accentuated by the carry trade phenomenon over 2005–07, which basically meant that, during that period, the exchange rate became more sensitive to shifts in relative monetary policy positions. Of course, what has happened since the onset of the international credit crisis is that monetary policy has become more independent as risk premia have increased; home bias has increased in the investor community; and the carry trade has diminished in importance. Our view is that this change is going to persist for some time – we are not going to have another credit boom in a hurry – so there will be a sustained period where higher risk premia and home bias will promote the independence of monetary policy in a country like New Zealand, even though we do have open capital markets.

Conclusion

Concluding my comments, I would like to make the following points:

- An open and flexible financial system certainly offers significant benefits in terms of economic efficiency and resilience to shocks, and no one in New Zealand or any other country that I am aware of has regretted the move towards capital market liberalisation.
- Currency internationalisation may or may not follow capital account liberalisation, depending on the country's individual circumstances, and in particular whether there is a demand in that country for balance sheet hedging of foreign currency risk.
- Monetary policy may be affected by currency internationalisation when global risk premia are low. The outlook for the medium term, I think, is for greater independence of monetary policy given the trend towards home bias among investors that we are seeing at present.

I will leave it there. Thanks very much for your attention. I look forward to the discussion.