

Research Paper and Policy Recommendations
on

Ways to promote foreign trade settlements
denominated in local currencies in East Asia

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Glossary of Abbreviations

ABF	Asian Bond Fund
ABMI	Asian Bond Markets Initiative
BIS	Bank for International Settlements
CFETS	China Foreign Exchange Trade System
CLS	Continuous Linked Settlement
CMI	Chiang Mai Initiative
CMIM	Chiang Mai Initiative Multilateralisation
ECB	European Central Bank
ECU	European Currency Unit
EMS	European Monetary System
EPA	Economic Partnership Agreement
EU	European Union
FTA	Free Trade Agreement
GCIF	Credit Guarantee and Investment Facility
HS	Harmonized system
LCP	Local currency pricing
OLS	Ordinary least square
PCM	Pricing-to-Market
PCP	Producer's currency pricing
PVP	Payment Versus Payment
RTGS	Real-Time Gross Settlement
SIC	Standard industrial classification
TARGET	Trans-European Automated Real-time Gross settlement Express Transfer system
TSE	Tokyo Stock Exchange

Executive Summary

This study analyzes the factors limiting the use of local currencies in invoicing and settlement of foreign trade in East Asia and explores ways to promote their use.

(Costs and benefits of using a regional currency in invoicing and settlement)

Using a regional currency in invoicing and settlement brings the following benefits to the region: (i) trade competitiveness of Asian companies would be less impacted by the fluctuations of non-regional currencies (i.e., the dollar, euro); (ii) trade finance would become easier, as the impacts from liquidity conditions of non-regional currencies would become less; and (iii) settlement risk (such as Herstatt risk) would be reduced.

There are some pre-conditions to become a regional currency: (i) the currency has to provide adequate “liquidity” to nonresidents as well as residents; (ii) the currency has to be backed by a large domestic economy to absorb internal and external shocks; (iii) the central bank of the currency has to provide liquidity at times of crisis; and (iv) the currency has to be stable vis-à-vis other currencies in the region.

For the country whose currency becomes the regional invoicing and settlement currency, its businesses would be freed from currency risks in their trading, while its monetary policy might become more influenced by regional developments.

(Promotion of the use of a regional currency in invoicing and settlement)

Promoting the use of a regional currency in invoicing and settlement and facilitating the regional economic growth are mutually reinforcing. The role of inertia is significant and staying in an inferior Nash equilibrium may result. In order to break the inertia or a coordination failure, policy actions to promote a regional currency as invoice and settlement currency may be justified. However, whether the current situation warrants strong policy actions has to be examined carefully. Regional use of a regional currency is a first step to make Asian currency an international reserve currency.

(Theoretical and empirical studies on currency invoicing)

In the literature on invoicing currency for trade, three stylized facts are well-known: i) trades between developed countries tend to be invoiced in the exporter’s currency; ii) trades between a developed and developing country tend to be invoiced in the developed country’s currency; and iii) differentiated products tend to be invoiced in the exporter’s currency, while commodities, such as

crude oil, are invoiced in an international currency, typically the US dollar. Theories on invoice currency show how the choice of an invoice currency depends on factors such as product differentiation, exchange rate volatility, market share, or the economic size of the exporter's country. Empirical studies, confirming theoretical projections, show that many factors, not only a country's macroeconomic and foreign exchange market conditions but also the nature of products and a firm's strategies affect the choice of an invoicing currency.

(The case of Japan)

According to official statistics, the breakdown of invoice currencies for Japanese trades in recent years is as follows. The share of the Japanese yen is around 40% for exports and between 20% and 30% for imports. The share of the US dollar is around 50% for exports and 70% for imports.

The share of the US dollar as the invoicing currency for exports is much higher in Japan than in other non-US developed countries. The high usage of the US dollar can be explained by the fact that Japanese exporters practice the PTM (pricing-to-market) behavior for exports to the US. It is more of a puzzle that they use the US dollar in their exports to Asia and the EU.

Our interviews with major Japanese exporters reveal the following findings: i) Invoicing in the currency of destination is prevalent among Japanese exports to developed countries; ii) Exports of electronics products tend to be invoiced in the US dollar even for exports to non-US markets; and iii) although Japanese firms have shifted their production bases to Asian countries, exports to and from these Asian bases (semi-finished goods) tend to be invoiced in US dollars as long as the final destination is the United States.

The major reasons why Japanese companies use the US dollar as a dominant invoicing currency within the Asian region are as follows: i) the headquarters in Japan rather than the foreign subsidiaries manages the foreign exchange risks due to the economies of scale and better skills in managing currency risk; ii) pricing-to-market when the final destination is the US and iii) high hedge costs for Asian currencies other than the yen.

(The case of Indonesia)

Data on Indonesia's international trade shows that the US dollar is the major invoicing currency for Indonesian exports. About 90% of total exports are in the US dollar. By destination, almost 100% of exports to the US are in the US dollar. Recent data shows that only 9% of exports to Europe are in the Euro and only about 10% of exports to Asia are in Asian currencies. The use of the Indonesian Rupiah (IDR) as an invoicing currency in all exports is very limited. It has never reached 2.5% in the

last ten years. The data on Indonesian imports shows a similar situation; that the major currency used as the invoicing currency is the US dollar. Indonesian firms simply choose the US dollar in their foreign trade transactions due to history, hedging motives, and market rules. There is weak evidence of a relationship between the choice of the invoicing currency and product differentiation, whether the product is final goods or parts, and whether they are exported directly or through trading companies. From Indonesian perspective, the Japanese yen and the Chinese renminbi meet the requirements to play the role as a vehicle currency for international trade among Asian countries.

(The case of Thailand)

The US dollar is the most widely used currency in international trade transactions. Less than 7 % of exports are denominated in Thai Baht. The ratio varies substantially among industries. The ratio of imports denominated in Thai Baht is lower than that for exports. The increase in the use of the Euro stems from both increased trade with the EU member countries and its use as a vehicle currency (third country's currency). As a vehicle currency, the use of the U.S. dollar was more prevalent than the Euro, but the Euro's share increased in both export and import transactions during the period 2001-2008. The share of Thai Baht in Thailand's exports has grown with the increase in Thailand's trade with other ASEAN countries. It implies that increases in intra-ASEAN trade would encourage the use of local currencies, the Baht in the case of Thailand.

(The case of Singapore)

According to the interviews with 15 Singapore-based exporters and importers, although the US dollar is the dominant invoicing currency in exports and imports, the Japanese yen and Singapore dollar are also accepted. In addition, it seems that the trading country currency is more prevalent in imports than exports from Singapore. The interviews also suggest a lukewarm attitude towards a greater use of the local currency, as the majority of the interviewees were of the opinion that the US dollar will continue to be the most relevant invoice currency in the future.

(Experience of the EU)

In Europe, a significant increase in intra-regional cross-border capital flows together with stable intra-regional foreign exchange rates due to the European Monetary System (EMS) contributed to a substantial reduction in the spreads of cross-foreign exchange rates among European currencies (cross foreign exchange transaction costs), and helped the West German mark to replace the US dollar as the vehicle currency in Europe in the 1980s. Since the launch of the Euro, it has steadily increased its share of the settlement and invoicing of trade, especially in the Euro zone as well as in the non-euro EU countries. This implies that regional monetary and financial cooperation could be effective in promoting the use of a regional currency.

(Action Plans)

Improve reliable data and statistics

Only a few countries currently release the data on currency choice in foreign trade invoicing and settlement, and the available statistics do not cover the whole of East Asia. Understanding the current situation would be critical in finding ways to promote the use of local currencies.

The following measures would be effective in increasing the volume and reducing the transaction costs of cross-foreign exchange transactions among East Asian currencies, and contribute to the increased use of local currencies as well as the growth and stability of the East Asian economy.

Remove capital controls

This should be done gradually and in a correct sequence. It would consequently increase the number of convertible currencies in East Asia. The capital controls of the member countries could be periodically reviewed in ERPD to support well-sequenced capital account liberalization.

Promote economic integration

Advancing the FTA/EPAs among the member countries and pursuing a regional FTA by integrating them would be beneficial as such developments would increase the size of the integrated economies and facilitate intra-regional trade, particularly that which is ultimately destined for the region, not outside the region.

Promote financial cooperation

The current CMIM, an effort to prevent a financial crisis, together with possible cooperation in the future for on intra-regional exchange rate stability should be effective.

Develop local currency capital markets

Further developments in the ABMI and ABF, CGIF (Credit Guarantee and Investment Facility), and the introduction of the Asian Local Currency Exchange Support Fund providing long-term local currency and interest rate derivatives in Asian currencies will contribute to the development of local currency capital markets, leading to the deepening and maturing of local currency foreign exchange markets.

Improve foreign exchange settlement systems in East Asia

In addition to the Bank of Japan, the Bank of Korea, the Hong Kong Monetary Authority, and the Monetary Authority of Singapore, other Asian central banks are urged to become members of CLS (Continuous Linked Settlement), providing multi-currency cash settlement system. Moreover, a swift move toward the region-wide cross-border RTGS system is recommended.

Promote competitiveness of East Asian companies

Internationally competitive goods tend to be invoiced in the exporters' currencies. Measures for economic integration will strengthen the competitiveness of East Asian companies.

Chapter 1 : Theoretical and empirical studies on an invoice currency in foreign trade

1-1. Introduction

This section reviews the literature on the choice of an invoice currency. First, we discuss the role of and preconditions for an international currency with a particular focus on the role of trade invoicing and settlement. Second, the “classic” stylized facts of invoicing choice are presented and discussed critically. Finally, the recent development of theory and empirics of an invoice currency is overviewed.

1-2. The International Use of a Currency: An Overview

The Role of an International Currency

A national currency is regarded as an international currency if it is used beyond the border of the country concerned in trade and financial transactions. The role of an international currency is analogous to that of a national currency that serves as a unit of account, a medium of exchange and a store of value. Distinguishing between private and official uses, Table 1-1 summarizes the role of an international currency.

Table 1-1: The Role of an International Currency

	Private Use	Official Use
Unit of account	Invoicing (trade and financial transactions)	Reference (exchange rate relationship)
Medium of exchange	Settlement (trade and financial transactions)	Intervention (foreign exchange markets)
Store of value	International asset holdings	International reserves

Source: Kenen (1983).

While there are several major currencies that are used internationally, the US dollar remains in a special position as an international currency. Tables 1-2 and 1-3 show that the share of the US dollar is particularly high in the use of international trade and foreign reserves. In trade transactions, the United States invoice most of exports and imports in US dollars (Tables 1-2A and 1-2B). Although the share of euro invoicing is the largest, that of US dollar invoicing is the second

largest in trade of Germany and France, as a representative of European countries. The share of US dollar invoicing is much higher in the import side of these countries. In France, the share of US dollar invoicing is higher than that of euro invoicing. More interestingly, the share of US dollar invoicing is far larger than that of yen invoicing in Japan's trade, especially in the import side. Why yen invoicing trade is so small in Japan's trade is an important issue and is discussed in detail in the following chapters.

Table 1-2A: The Share of an Invoice currency in Exports (%)

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
United States											
US Dollar	n.a.	n.a.	n.a.	n.a.	95.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Others	n.a.	n.a.	n.a.	n.a.	5.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Germany											
US Dollar	n.a.	n.a.	n.a.	30.5	24.1	22.7	23.9	21.5	21.3	n.a.	n.a.
Euro	n.a.	n.a.	n.a.	50.1	63.0	63.2	61.0	67.8	65.2	n.a.	n.a.
Others	n.a.	n.a.	n.a.	19.4	12.9	14.1	15.1	10.7	13.5	n.a.	n.a.
France											
US Dollar	35.5	42.6	41.0	37.0	36.6	39.1	37.4	37.2	36.8	n.a.	n.a.
Euro	49.7	50.5	50.8	50.5	49.0	49.2	49.8	50.8	51.3	n.a.	n.a.
Others	14.8	6.9	8.2	12.5	14.4	11.7	12.8	12.0	11.9	n.a.	n.a.
Japan											
US Dollar	n.a.	52.4	52.6	50.7	48.0	47.5	50.1	51.3	49.3	49.8	49.2
Yen	n.a.	36.1	35.6	36.7	39.3	40.1	38.4	37.1	38.7	39.4	40.2
Others	n.a.	11.5	11.8	12.6	12.7	12.4	11.5	11.6	12.0	10.8	10.6

Table 1-2B: The Share of an Invoice currency in Imports (%)

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
United States											
US Dollar	n.a.	n.a.	n.a.	n.a.	90.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Others	n.a.	n.a.	n.a.	n.a.	10.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Germany											
US Dollar	n.a.	n.a.	n.a.	35.3	33.9	33.8	37.1	34.3	37.2	n.a.	n.a.
Euro	n.a.	n.a.	n.a.	48.4	55.2	53.9	55.2	59.4	56.9	n.a.	n.a.
Others	n.a.	n.a.	n.a.	16.3	10.9	12.3	7.7	6.3	5.9	n.a.	n.a.
France											
US Dollar	48.4	47.2	45.7	45.2	46.8	46.4	46.1	46.4	46.2	n.a.	n.a.
Euro	44.9	43.4	42.6	40.8	44.1	45.7	43.6	44.3	44.2	n.a.	n.a.
Others	6.7	9.4	11.7	14.0	9.1	7.9	10.3	9.3	9.6	n.a.	n.a.
Japan											
US Dollar	n.a.	70.7	69.6	67.6	67.8	69.5	72.1	73.0	73.5	74.7	70.1
Yen	n.a.	23.5	23.6	25.5	25.3	23.8	22.1	21.3	20.9	20.7	24.6
Others	n.a.	5.8	6.8	6.9	6.9	6.7	5.8	5.7	5.6	4.6	5.3

Sources: Goldberg and Tille (2005); European Central Bank (2009); MITI, *Yushutsu Hokukosho Tsukadate Doko* (Export Currency Invoicing Report); MITI, *Yushutsu Kessai Tsukadate Doko Chosa* (Export Settlement Currency Invoicing); MITI, *Yunyu Hokukosho Tsukadate Doko* (Import Currency Invoicing Report); MITI, *Yunyu Kessai Tsukadate Doko Chosa* (Import Settlement Currency Invoicing).

As a foreign reserve currency, a dominant position of the US dollar is more evident (Table 1-3). Although somewhat declining from 1999 to 2009, the US dollar still accounts for the largest share, more than 60 percent in the world, and its share is somewhat higher in advanced economies than in emerging and developing economies. Since 1999, the share of the euro has risen steadily but that of the yen has declined. In particular, the yen accounts for only 1.7 percent as of 2001 in emerging and developing economies. Furthermore, when focusing on a role of medium of exchange, the volume of US dollar transactions is by far the largest in world foreign exchange markets. According to the foreign exchange market survey conducted by Bank for International Settlements (BIS), the US dollar transactions account for around 86 percent in 2007 (see Table 4-4 in Chapter 4), which reflects a dominant vehicle role of the US dollar in foreign exchange transactions.

Table 1-3: Currency Composition of Official Foreign Exchange Reserves (%)

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
World Total											
US Dollar	71.0	71.1	71.5	67.1	65.9	65.9	66.9	65.5	64.1	64.2	63.1
Euro	17.9	18.3	19.2	23.8	25.2	24.8	24.0	25.1	26.3	26.4	27.0
Pound Sterling	2.9	2.8	2.7	2.8	2.8	3.4	3.6	4.4	4.7	4.1	4.2
Yen	6.4	6.1	5.0	4.4	3.9	3.8	3.6	3.1	2.9	3.1	3.1
Others	1.8	1.8	1.6	2.0	2.2	2.0	1.9	2.0	2.0	2.2	2.6
Advanced economies											
US Dollar	70.4	70.3	71.1	67.3	67.8	67.8	69.7	68.6	66.5	68.0	67.0
Euro	17.5	17.7	18.3	22.4	22.5	22.3	20.7	21.6	23.5	22.5	23.3
Pound Sterling	3.0	2.8	2.7	2.9	2.4	2.7	2.8	3.3	3.6	2.8	2.8
Yen	7.3	7.4	6.2	5.3	5.0	4.9	4.7	4.3	4.0	4.3	4.3
Others	1.8	1.8	1.7	2.1	2.4	2.3	2.1	2.2	2.4	2.4	2.5
Emerging and developing economies											
US Dollar	72.7	73.3	72.5	66.6	61.9	62.0	62.1	61.0	61.6	60.3	58.9
Euro	19.0	19.7	21.3	26.9	31.1	30.0	29.7	30.1	29.2	30.6	31.1
Pound Sterling	2.5	2.5	2.7	2.7	3.6	4.8	5.0	5.9	5.8	5.3	5.7
Yen	4.0	2.7	2.3	2.2	1.6	1.7	1.7	1.3	1.8	1.9	1.7
Others	1.9	1.7	1.2	1.6	1.8	1.5	1.5	1.7	1.6	2.0	2.6

Note: Figures as of 2009 are computed using the data of first through third quarters.

Source: The website of International Monetary Fund.

Preconditions for the International Use of a Currency

Why is the US dollar used dominantly as an international currency? Why is the international use of other currencies such as the yen still limited? To answer these questions, let us consider the preconditions for the international use of a currency. Now, it is generally agreed that the following two preconditions must be met for the international use of a currency¹.

¹ These preconditions are discussed in Tavlas and Ozeki (1992) and Tavlas (1992).

1. There needs to be confidence in both the value of its currency and the political stability of the country concerned.
2. A country should maintain the convertibility of its own currency. It should also possess well-developed financial markets; broad, in that they contain a large assortment of financial instruments; deep, in that they have well-developed secondary markets; and free of controls on financial transactions.

Confidence of the stability of a currency is obviously a necessary qualification. If a currency in question is quite unstable and tends to fluctuate substantially, it will not work as a store of value. It will also be avoided to use a currency as a unit of account and a medium of exchange in trade and financial transactions due to a significant risk of exchange rate changes. Convertibility of a currency, at least at current account transactions, is also an important precondition, because the currency is hard to be used for both funding and investment as long as capital control is imposed.

If a country in question has a well-developed financial market, there are a variety of financial instruments to be invested by foreign investors, which facilitates the use of the currency as a store of value and even as a medium of exchange. Moreover, once a currency becomes a dominant vehicle currency in foreign exchange markets, the currency will be used as a major international currency due to economies of scale. Specifically, the larger the volume of transactions is in foreign exchange markets, the lower the cost of transactions is. Krugman (1980, 1984) argues that a currency the transaction cost of which is the lowest will become an international currency. The current status of the US dollar as a key international currency stems mainly from the dominant use of the US dollar as a vehicle currency in foreign exchange markets, which facilitates the use of the US dollar as a unit of account and a store of value. Thus, a virtuous circle occurs given the dominant vehicle role of the US dollar in the foreign exchange market. Despite such a strong inertia in favor of using the US dollar, the international use of a currency is not solely determined by the transaction costs or convenience of financial transactions. This is particularly true in trade transactions. The use of a currency in international trade is discussed in detail from the following section.

The Role of a Currency in Trade: Price-Setting, Invoicing and Settlement

In the literature on the use of currency in international trade, “invoicing” at the stage of contract and “settlement” at the stage of payment are theoretically distinguished, based on the role of international currency in Table 1-1. Friberg (1988) makes this distinction in his theoretical analysis and points out that the same currency is used in practice at each stage². Friberg and Wilander (2008) make a questionnaire survey with Swedish exporting firms and have found that they use the same

² While Friberg (1998) discusses the three roles of a currency in international trade: pricing, invoicing and settlement currencies, we implicitly assume that exporting firms conduct both pricing and invoicing at the same time.

currency at each stage of international transactions. Ito, Koibuchi, Sato and Shimizu (2009) also conduct an interview analysis with major Japanese exporting firms and have recognized that they do not typically make distinction between invoicing and settlement. These observations indicate that the role of a unit of account and that of a medium of exchange are closely linked with each other. We hereafter discuss a trade invoice currency but it has a broad meaning that covers both invoicing and settlement.

1-3. “Classic” Stylized Facts of the Choice of Invoice Currency³

There have been a large number of theoretical and/or empirical studies that explore the selection of invoice currency. Grassman (1973) is one of the first studies that found the regularity of currency invoicing based on the Swedish trade data in 1968. Specifically, Grassman found a tendency of exporter’s currency invoicing in trade between industrialized countries, which is currently named the “Grassman’s law”.

Classic Stylized Fact 1: Trade between developed countries tends to be invoiced in the exporter’s currency. The importer’s currency comes second, but the third currency is rarely used.

Which currency is used in trade between developed and developing countries? Grassman (1973) and Page (1977, 1981) showed that the developed country’s currency or the third country’s currency (i.e., an international currency such as previously the UK pound and currently the US dollar) was generally used in trade between developed and developing countries.

Classic Stylized Fact 2: Trade between developed and developing countries tend to be invoiced in the developed country’s currency or the third currency (the international currency such as the US dollar).

In the above two stylized facts, the invoicing choice is conditional on which country is a trading partner. McKinnon (1979) relates the invoicing choice with the characteristics of goods traded. Specifically, McKinnon argues that differentiated goods tend to be invoiced in the exporter’s currency, because producers (exporters) of such goods should have stronger negotiating power against customers (importers) and, hence, have an incentive to pass through the exchange rate risk to customers (importers) by invoicing in their own currency. Machinery products are regarded as a typical example of the differentiated goods that are named “Tradables I”. In contrast, more

³ This subsection relies on Ligthart and da Silva (2007).

homogeneous products such as crude oil and raw materials are generally invoiced in US dollars, since these products are traded in US dollars in international commodity markets. These products are named “Tradables II”. The so-called McKinnon’s hypothesis amounts to the following stylized fact.

Classic Stylized Fact 3: Differentiated products such as machinery products tend to be invoiced in the exporter’s currency. More homogeneous products such as crude oil and primary commodity are typically invoiced in the international currency such as the US dollar.

We name the three stylized facts “classic”, because these are based on the empirical evidence in the 1970s. It is interesting to examine whether the three classic stylized facts can explain the currency invoicing pattern of the contemporaneous trade transactions and, especially, the currency choice of Japanese exporters. A novelty of this study is to present the detailed information on the choice of invoice currency by major Japanese exporting companies through an interview analysis, which will be shown in Chapter 2. In the remaining part of this chapter, we review the recent development of the theory and the empirics of invoice currency.

1-4. Review of the Theory of an Invoice Currency⁴

Theory of an Invoice Currency

In this section, we overview the recent development of theoretical studies. The classic stylized facts 1 and 2 are derived from the cross-country data on invoicing choice of total exports and imports and not based on an industry/firm level data on trade invoicing practices. The classic stylized fact 3 relates the characteristic of traded goods with firm’s choice of an invoice currency, but is derived from the theoretical consideration of the profit maximizing behavior of exporting firms. Giovannini (1988) and Donnenfeld and Zilcha (1991) model the firm’s choice of an invoice currency by solving the maximization problem of the firm’s expected profit with the uncertainty of exchange rate movements. They show that the choice of an invoice currency depends on the shape of the firm’s profit function that is, in turn, conditional on the curvature of the demand function in the destination markets. The more (less) differentiated the firm’s export product is, the lower (higher) the elasticity of demand for them is, which leads to exporter’s (importer’s) currency invoicing. Thus, the firm’s choice of an invoice currency has to do with the product differentiation and is modeled under the framework of the exchange rate pass-through or pricing-to-market behavior.

⁴ This subsection rests on Bacchetta and van Wincoop (2005) and Oi, Otani and Shirota (2004).

The Third Currency Invoicing

While the above studies discuss the invoicing choice either in exporter's currency or in importer's currency, they do not explicitly consider the choice of the third currency for trade invoicing. Johnson and Pick (1997) and Friberg (1998) extend the theoretical model of invoicing choice by analyzing in which condition the third currency invoicing is chosen. They show that not only the shape of the profit function but also the exchange rate volatility (variance) against the importer's currency determines the choice of invoice currency. Specifically, the invoice currency is determined by the size of variances between the exchange rate of the exporter's currency vis-à-vis the importer's currency and the corresponding exchange rate of the third currency. This implies that emerging countries may choose not their own currency but the third currency such as the US dollar even in trade between them as long as their currency tends to fluctuate substantially.

General Equilibrium Model

While the above models based on the firm's maximization of the expected profit are analyzed under the partial equilibrium framework, recent studies apply the general equilibrium model to the choice of an invoice currency. In the partial equilibrium model, the exchange rate uncertainty is assumed to be exogenous. In contrast, against the background of the recent development of the New Open Economy Macroeconomics, the exchange rate and other macroeconomic variables are subject to the fundamental shocks. For instance, Bacchetta and van Wincoop (2005) analyze the choice of an invoice currency by assuming that the fluctuation of the money supply in both domestic and foreign countries is the source of macroeconomic shocks under the two-country general equilibrium model. Specifically, the choice of an invoice currency is examined by comparing the expected utility between the producer's currency pricing (PCP) and the local currency pricing (LCP). The PCP is chosen if the exporting firm's market share is larger in the destination market and if the economic size of exporting firm's country is larger.

1-5. Empirics of Firm's Invoicing Choice

How are the theoretical models of invoicing choice applied to the empirical research? There have been two strands of empirical research on the choice of invoice currency. The first strand of research estimates the extent of exporter's, importer's or the third currency invoicing based on the model of expected profit maximization. This line of research is particularly useful because the detailed data on invoice currency, such as the commodity/industry breakdown or destination/source breakdown data is rarely available. By utilizing the highly disaggregated trade data by commodity by country, it is possible to estimate the share of invoice currency in exports and imports based on

the firm's maximization behavior of expected profit. Among others, Fukuda and Ji (1994) and Sato (1999, 2003) apply the theoretical model of invoicing choice to the case of Japanese exports using the 9-digit H.S. export data.

Fukuda and Ji (1994) estimate the share of US dollar invoicing or yen invoicing in Japanese machinery exports to the United States and East Asia with the sample period from January 1998 to December 1992. The sample commodities of Fukuda and Ji (1994) are four types of products: small and medium-size automobiles, TV and VCRs. It is found that invoicing choice differs markedly between the United States and East Asia. While exports to East Asia are largely invoiced in the yen, Japanese firms tend to invoice the four products in US dollars in exports to the United States. Specifically, even though the four machinery products are considered differentiated products, Japanese firms tend to stabilize their export price in the US market by invoicing in US dollars, which contradicts the classic stylized fact 3. Such invoicing practices are consistent with the pricing-to-market (PTM) behavior discussed in the previous subsection.

The results of Fukuda and Ji (1994) suggest that yen invoicing is prevalent in Japanese exports to East Asia. Even though exporting the same type of products, invoicing practice differs across markets (destination countries) reflecting the difference in the degree of competitiveness. Since the US market is far more competitive, the price elasticity of demand is higher in US market than the East Asian market and, hence, US dollar invoicing is chosen in exports to the former market. The difference in the degree of competitiveness reflects that of the curvature of the demand function in each market.

As will be discussed in Chapter 2, however, Sato (2003) points out that the share of yen invoicing did not increase in Japan's exports to Asia from the 1990s. Sato (2003) conducts the error-correction estimation of currency invoicing for 13 products at HS 9-digit level with the sample period from January 1988 to December 1999. It is found that electronics products tend to be invoiced in US dollars even in Japanese exports to East Asia. The market of electronics products, especially semi-conductors and ICs, is highly competitive, which results in the high elasticity of demand for these products. Thus, even though categorized into machinery products, the electronics products tend to be invoiced in US dollars even in exports to emerging economies such as East Asian countries.⁵

1-6. Determinants of an Invoice Currency

The second strand of empirical research is to analyze the determinants of currency invoicing. Recently, there have been growing studies that collect currency invoicing data for many

⁵ Fukuda and Ono (2005) estimate the currency invoicing behavior in trade between Japan and Korea.

sample countries / firms, and conduct an empirical analysis using possible determinant variables such as the exchange rate volatility, the difference in inflation rates, export dependence on the United States, etc.

Table 1-4 summarizes the major empirical studies. These studies are classified in three types, cross-country analysis, a country analysis by industries and firm level analysis in a country. Goldberg and Tille (2005, 2008) and Kamps (2006) are belongs to the cross-country analysis. Goldberg and Tille (2005, 2008) conduct a panel analysis of 24 sample countries and show that US dollar (euro) invoicing will be growing if the export dependence on the United States (euro area) becomes larger, and also that the US dollar invoicing share will be growing if homogeneous products account for a larger share. Kamps (2006) also conducts panel estimation by using the data for 42 sample countries and reaches the similar conclusion about the determinants of US dollar invoicing to Goldberg and Tille (2008). Regarding to the share of euro invoicing, Kamps (2006) confirms that the introduction of the common currency in the euro area increased the invoicing in euro at the expense of the US dollar.

Although including many countries in the sample, the above two studies employ the share of invoice currency in one country as an explained variable, and do not use the partner country breakdown data nor the commodity breakdown data on invoice currency. Ligthart and da Silva (2007) and Donnenfeld and Haug (2003, 2008) investigate the determinants of currency invoicing by employing partner country breakdown or/and commodity breakdown data in one country. Ligthart and da Silva (2007) investigate the pattern and the determinants of currency invoicing in Netherland's trade with 30 OECD countries. As the results, they conclude that the failure of Grassman's law in the Netherlands can be explained by the well-developed Dutch banking sector, the relatively large openness of the Dutch economy, and the relatively low rate of Dutch inflation. Donnenfeld and Haug (2003, 2008) examine currency invoicing of Canadian and US imports with the commodity breakdown data on currency invoicing at HS 6-digit and SIC 4-digit level with 16 trading partner countries, but the sample period is either old or short.⁶ Their empirical results indicate that the exchange rate risk and the relative size of a country play an important role in determining the invoicing currency.

Firm level analyses are able to employ the share of invoice currency in firm level as an explained variable and investigate the determinants of invoice currency more specifically from the standpoint of firm's strategy. Friberg and Wilander (2007, 2008) and Ito, Koibuchi, Sato and Shimizu (2009) are belongs to the firm level analysis. Friberg and Wilander (2007, 2008) execute questionnaire survey of currency invoicing with Swedish exporting firms in 2006 and conducted econometric analysis of the determinants of invoice currency, which is a significant advance from

⁶ Donnenfeld and Haug (2003) use the quarterly series of the data ranging from 1989 to 1994 and Donnenfeld and Haug (2008) employs the monthly series of the data from August 1996 to July 1998.

the previous studies. They derived many aspects of determinants of invoice currency in firm level. One of their major findings is that a local currency invoicing (Swedish kronor) is more likely to be chosen by smaller firms and firms in differentiated product industries. However, there is a limitation in the empirical analysis of Friberg and Wilander (2007, 2008), because they do not use the commodity and destination country breakdown data on the share of invoice currency.

In marked contrast to the previous studies, Ito, Koibuchi, Sato and Shimizu (2009) conducted the interview analysis of 23 major Japanese exporting firms on the currency invoicing strategy and the exchange rate risk management. Although they do not have the large number of sample firms, they carefully interviewed and discussed with the treasurer's department of each firm on their strategy or policy of currency invoicing, which enables to derive possible determinants of currency invoicing that have not yet been analyzed rigorously in the literature. By constructing a firm-level data set obtained from annual securities and financial reports of each sample firm, Ito, Koibuchi, Sato and Shimizu (2009) conduct empirical investigation and present the new findings of the determinants of currency invoicing in the case of Japanese exporters, which has been treated as an outlier of "Grassman's law" in the literatures. They conclude that the small share of Japanese yen invoicing (high share of US dollar invoicing) in Japanese exports is largely due to the development of Japanese production network expanded in Asia driven by Japanese electronics companies.

Table 1-4: Summary of Major Empirical Studies

Reference	Sample and Method	Main Results
1. Cross-country analysis		
Kamp (2006)	42 countries, 1994-2004 (unbalanced) Panel dataset, Panel estimation	The introduction of the common currency in the euro area increased the invoicing in euro at the expense of the US dollar.
Goldberg and Tille (2005, 2008)	24 countries' invoicing currency data, Regression	The key determinants of invoice currency choice are industry features, country size, and foreign exchange bid-ask spreads. US dollar invoicing will be growing if the export dependence on the United States becomes larger, and also that the US dollar invoicing share will be growing if homogeneous products account for a larger share.
2. A country analysis (trade data by regions/industries)		
Ligthart and da Silva (2007)	Dutch trade data with 30 OECD countries, SURE (563 sample numbers) and pooled GLS estimation (1689 sample numbers)	The failure of Grassman's law in the Netherlands can be explained by the well-developed Dutch banking sector, the relatively large openness of the Dutch economy, and the relatively low rate of Dutch inflation.
Donnenfeld and Haug (2003, 2008)	Canadian import (2003) and US imports (2008) with the commodity breakdown data (12 industries with 16 countries in Canada and 43 industries with 16 countries in US), Multinomial and binomial Logit estimation	The bigger is the size of the trading partner's economy and the less volatile is the currency of the trading partner, the less is the probability of home currency invoicing (2003). The higher the volatility of the exchange rate, the larger is the fraction of imports invoiced in the importer's currency (2008).
3. Firm level analysis		
Friberg and Wilander (2008)	Swedish exporters, Questionnaire study of 256 sample numbers, Regression (linear probability specification / Logit)	Smaller firms and firms in differentiated product industries are more likely to use Swedish kronor.
Ito, Koibuchi, Sato and Shimizu (2009)	Major Japanese exporters, Interview analysis of 23 exporting firms, Regression (OLS / Probit)	Small share of Japanese yen invoicing in Japanese exports is largely due to the development of Japanese production and trade structure in Asia driven by Japanese electronics companies.

Sources: Donnenfeld and Haug (2003, 2008), Goldberg and Tille (2005), Kamps (2006), Ligthart and da Silva (2007), Ito, Koibuchi, Sato and Shimizu (2009).

Table 1-5 summarizes the explanatory variables in the above empirical studies. These variables are classified into three conditions, “Country's macroeconomic condition”, “Firms' condition”, and “Foreign exchange rate and FX market condition”. Due to their results, we recognize that many factors, not only country's macroeconomic and FX market conditions but also the nature of products and firm's strategies affect the choice of invoicing currency. In “Country's macroeconomic condition”, several literatures indicate that the size of country's economy size is one of the important factors to decide the invoicing currency. The US dollar is dominantly used as an invoicing currency particularly in the transactions involving the United State as a counterparty in

most countries. Due to Table 1-5, many factors to promote the US dollar invoicing are indicated as follows; first, the United State is the largest economy in the world; second, US inflation rate is relatively stable and lower than many other countries; third, the United State is the largest importer in the world, which means that the share of export to the North America is high; fourth, many industrialized countries export the homogeneous products where firms need to invoice them in the US dollar in order to keep their price in line with their competitors' ; fifth, most raw materials are invoiced in the US dollar customarily; sixth, the transactions in Asian production network is expanding and the final destination of these products is mainly headed to the US market; seventh, the US dollar has the lowest transaction cost in the world currencies; eighth, many emerging country's currencies are pegged to the US dollar; ninth, the FX market in the United States is deep and wide; tenth, the US banking sectors are highly developed. In addition to them, network externalities, inertia and herding motives push the US dollar invoicing.

As we cited above, it is really difficult to promote local currency invoicing instead of the US dollar especially in Asian countries. What we have to do at first is to gain an understanding of the actual situation in Asian countries, which will be presented in Chapter 2.

Table 1-5: Summary of Explanatory Variables in Literature

Explanatory variables	Description	Reference
1. Country's Macroeconomic Condition		
Country's economic size	Exporters from small countries are less likely to invoice in their own currencies.	Donnenfeld and Haug (2003, 2008) Goldberg and Tille (2008)
Country's inflation differential with the US / Expected inflation / Volatility of inflation	A high inflation differential with respect to US (the monetary stability of a country) makes the use of the country's currency less likely.	Kamp (2006) Ligthart and da Silva (2007)
Country's macro-economic volatility	A high volatility of real aggregate demand makes the use of the country's currency less likely (Goldberg and Tille, 2005). Macroeconomic volatility should affect invoicing decisions through the correlations between exchange rates and marginal costs (Goldberg and Tille, 2008).	Goldberg and Tille (2005, 2008)
2. Firms' Condition		
Share of export to the North America / Share of a country's exports to the US relative to a country's total export	The higher is the share of trade with the US, the higher is the share of US dollar invoicing.	Goldberg and Tille (2005, 2008) Kamp (2006) Friberg and Wilander (2008) Ito, Koibuchi, Sato and Shimizu (2009)
Share of foreign sales	The higher is the share of foreign sales, the less is the transaction cost of foreign currencies instead of home currency.	Friberg and Wilander (2008)
Exporter's firm size	The bigger is the firm size, the better is the foreign exchange risk management.	Friberg and Wilander (2008)
Share of differentiated trade export / Share of "differentiated product" good	Differentiated product exporters tend to choose PCP.	Goldberg and Tille (2005, 2008) Kamp (2006) Friberg and Wilander (2008) Ito, Koibuchi, Sato and Shimizu (2009)
Share of "homogeneous product" / Share of exporting products customarily traded in US dollar	Homogeneous product exporters tend to choose US dollar invoicing. Share of reference-priced plus organized exchange traded (G. and T. 2005,2008), Products of electronics (IKSS 2009)	Goldberg and Tille (2005, 2008) Ito, Koibuchi, Sato and Shimizu (2009)
Raw materials (broad definition)	Raw materials are invoiced in the US dollar customarily.	Ligthart and da Silva (2007)
Head office's equity share of local subsidiaries (Intra- or inter-firm trade)	If the head office in Japan has large equity share on local subsidiary (inter-firm trade), the company tends to choose local currency invoicing in the trade between the head office and the local subsidiary.	Ito, Koibuchi, Sato and Shimizu (2009)
Trade through trading company	Firms who trade with trading company can impose foreign exchange risk on them by choosing Japanese yen invoicing.	Ito, Koibuchi, Sato and Shimizu (2009)
Share of exports from Asian production base to the US market	In the commercial distribution from Asian plants to the US/ US firms, the firms usually choose US dollar as an invoice currency considering currency matching from plants to final destination.	Ito, Koibuchi, Sato and Shimizu (2009)
Explicit policy of choosing a specific currency for invoicing	"USD invoicing policy" is set for the firms who unify their invoice currencies to US dollar in order to exploit the merits of marry and netting in the whole group companies.	Ito, Koibuchi, Sato and Shimizu (2009)

Table 1-5: Summary of Explanatory Variables in Literature (cont'd)

Explanatory variables	Description	Reference
3. Foreign Exchange Rate and FX Market Condition		
Volatility of country's exchange rate	The higher is the volatility of local currency, the lower is the share of local currency invoicing	Donnenfeld and Haug (2003, 2008) Kamp (2006) Ligthart and da Silva (2007)
Forward market for their currency	An existence of a forward market implies more invoicing in PCP and less invoicing in USD.	Kamp (2006)
FX transaction cost (bid-ask spread)	The higher is the transaction cost of country's currency, the lower is the share of local currency invoicing.	Goldberg and Tille (2008) Ito, Koibuchi, Sato and Shimizu (2009)
Currency regime; a country's currency is in a hard peg with the USD (Euro)	Adopting US dollar peg system makes positive effect for USD (Euro) invoicing.	Kamp (2006)
Foreign exchange market depth	Local currency invoicing is likely to be more chosen if the country has a deep foreign exchange market.	Ligthart and da Silva (2007)
Banking sector development	Local currency invoicing is likely to be more chosen if the country's banking sector is well developed.	Ligthart and da Silva (2007)

Sources: Donnenfeld and Haug (2003, 2008), Goldberg and Tille (2005), Kamps (2006), Ligthart and da Silva (2007), Ito, Koibuchi, Sato and Shimizu (2009).

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Chapter 2 : Invoice and settlement currencies in foreign trade in East Asia

2-1. Introduction

In order to find and suggest ways to promote the use of local currencies in Asia, we have to review and describe how local currencies have been used as invoice or settlement currencies for foreign trade in East Asia. Unfortunately, the information on the use of local currencies as invoice and settlement currencies in East Asia has been quite limited so far. One of the most important requirements on this project should be collecting more information on invoicing currencies, through statistics, literatures, surveys, and interviews, in collaboration with regional countries.

In this section, we investigate the background of the limited use of local currencies and the prevailing use of the US Dollar not only from the statistics of country levels, but also from the standpoint of choice of invoicing currency in firm levels in Japan, Thailand, and Indonesia.

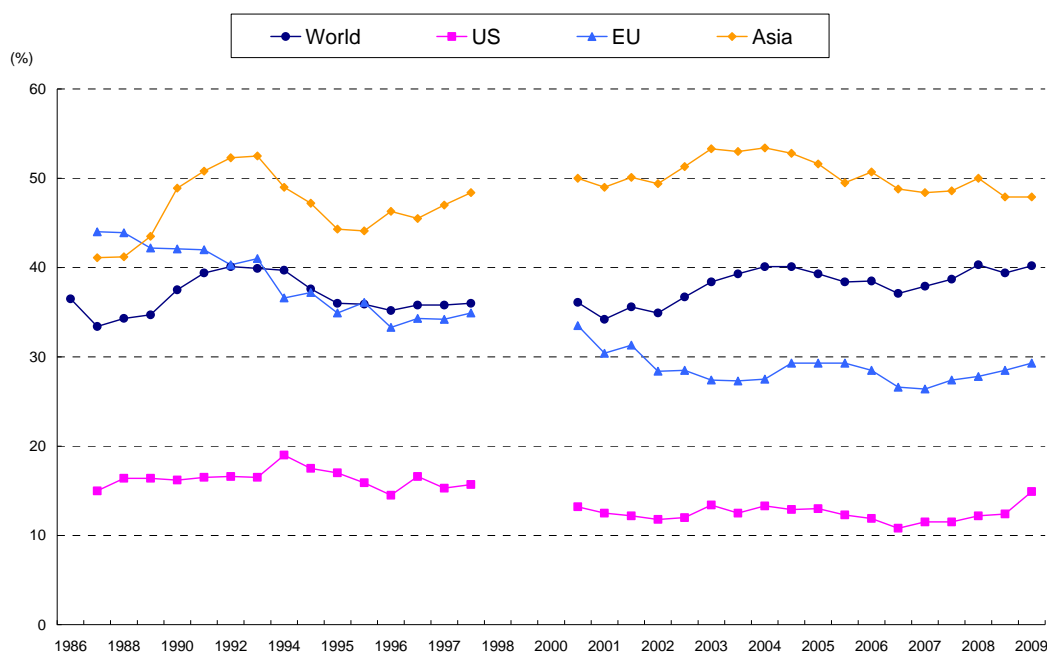
2-2. The case of Japan

2-2-1. Development of invoice and settlement currencies in Japan

This section describes the invoicing data of Japan. At first, let us investigate the change in local currency (Japanese yen) invoicing share in Japan. The destination and source country (region) data on the Japanese yen invoicing is presented in Figures 2-1 and 2-2. The four destinations and source regions (countries) are covered in the data: the world total, the United States, EU and Asia. The sample period ranges from 1986 to the first half of 2009.

Figure 2-1 shows the share of yen invoicing in Japan's export. As a whole, the share of yen invoicing in exports to world fluctuated within the range from 30 to 40 percent. It has stayed around 40 percent since 2003. Among three destinations, the share of yen invoicing was the highest in exports to Asia, which fluctuated around 50 percent. Until around the mid-1990s, when a question of the internationalization of the yen was lively debated, it was generally recognized that the use of the yen as an invoice currency would be growing in Asia if intra-firm trade increased between Japanese parent companies and local subsidiaries through active foreign direct investment in Asia by Japanese firms. Actually, the share of yen invoicing rapidly climbed up above 50 percent in the early 1990s. However, it has not increased from the mid-1990s to the present, even though Japanese firms build a regional production network during that period.

Figure 2-1: Share of local Currency Invoicing on Export by Region (%)



Source: Data from 1986 to 1998 are annual data from *Yushutsu Kessai Tsukadate Doko Chosa* (Export Settlement Currency Invoicing) by the Ministry of Economy, Trade, and Industry. Data since 2000 are semi-annual data from Japan Customs Trade statistics by the Ministry of Finance and the Customs.

Note: Due to transition period of data calculation, no data is available in 1999 to the first half of 2000.

The lowest is the share in exports to US, which was in a clear downward trend by 2006 from 19 percent in 1994 to 11 percent in 2006. Such a fall of the yen invoicing share is generally attributed to the Pricing-to-Market (PTM) strategy of Japanese exporters. Just after the global financial crisis caused by the subprime lending problems in US, the yen invoicing share in exports to US picked up to 15 percent in 2009, however it is too short to be analyzed such a movement. In exports to EU, the share of the yen declined from 44 percent in 1986 to less than 30 percent in the 2000s. After introducing the euro in 1999, more than 50 percent of Japanese exports to EU were invoiced in the euro as we see later in this section.⁷ Same as the exports to US, the share of the yen has been in a gradual upward trend since 2007.

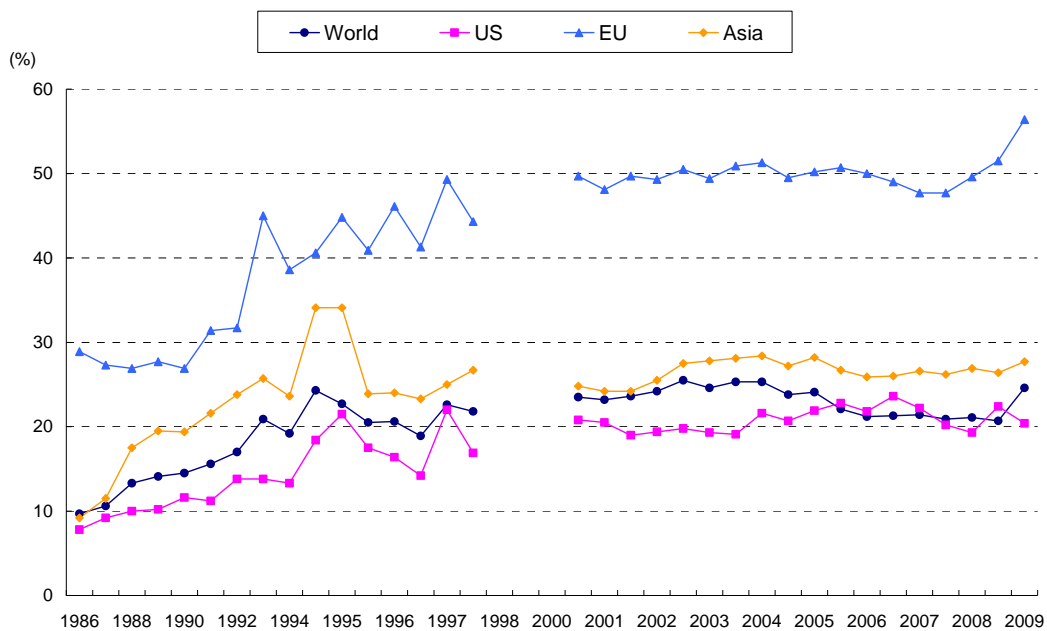
Figure 2-2 shows the share of yen invoicing on Japan's import. The share of yen invoicing in import from world increased gradually from 10 percent in 1986 to 24 percent in 1995, when the Japanese yen hit the historical highest exchange rate vis-à-vis the US dollar. After then, however, it

⁷ If including the UK pound in the local currency, the share of local currency invoicing in Japanese exports to EU amounts to around 60 percent.

did not increase much from then on and remained at 20 percent even in 2000s. Among three destinations, the share of yen invoicing was the highest in imports from EU, which fluctuated around 50 percent in 2000s and climbed up to 56 percent in 2009. Such a rise of the yen invoicing share is seemed to be promoted by PTM strategy of European exporters. Contrary to imports from EU, the shares in imports from Asia and from US have stayed around 25 percent and 20 percent, respectively, which did not show any clear trend in 2000s.

These data indicates two findings; first, yen invoicing share is completely different between imports from EU and imports from US and Asia, and second, the US dollar is still dominantly used in import from Asia and US.

Figure 2-2: Share of local Currency Invoicing on Import by Region (%)



Source: Data from 1986 to 1998 are annual data from *Yushutsu Kessai Tsukadate Doko Chosa* (Export Settlement Currency Invoicing) by the Ministry of Economy, Trade, and Industry. Data since 2000 are semi-annual data from Japan Customs Trade statistics by the Ministry of Finance and the Customs.

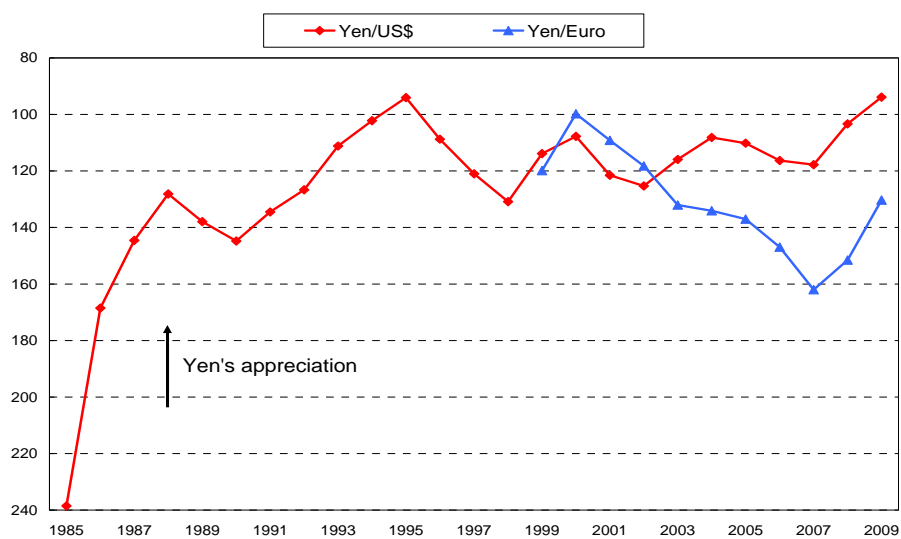
Note: Due to transition period of data calculation, no data is available in 1999 to the first half of 2000.

It is difficult to find out the clear relationship between the share of yen invoicing and the exchange rates, however, we just check the movement of nominal exchange rated of the Japanese yen vis-à-vis the US dollar and the Euro in the same period (Figure 2-3). By comparing the above and the below figures, we can find some periods which show the relationship between yen's appreciation and decline of yen invoicing share in exports, and rise in invoicing share in imports as follows:

- During a rapid appreciation period of the yen vis-à-vis the US dollar from 1985 to 1987 just after the Plaza Accord, yen invoicing share in exports declined.
- Around 1995 when the yen hits its historical highest exchange rate vis-à-vis the US dollar, yen invoicing share in exports declined.
- During a long trend of yen's appreciation vis-à-vis the US dollar from 1986 to 1995, yen invoicing share in imports rose.
- Recent yen's appreciation vis-à-vis the US dollar and the Euro, yen invoicing shares in imports to EU and Asia rose.

Against the fluctuations of yen's exchange rates, Japanese firms are said to have PTM strategy, which stabilize the selling price in terms of the US dollar by invoicing in US dollars in order to maintain their own market share. However, recent yen's appreciation seemed to promote the rise of yen invoicing share both in exports and imports, which is not consistent with the relationship observed in 1980s and 1990s. Accordingly, we cannot confirm any clear relationship between the share of yen invoicing and the appreciation of the Japanese yen.

Figure 2-3: Nominal Exchange rate of the Japanese yen vis-à-vis the US dollar



Source: Bank of Japan, IFS.

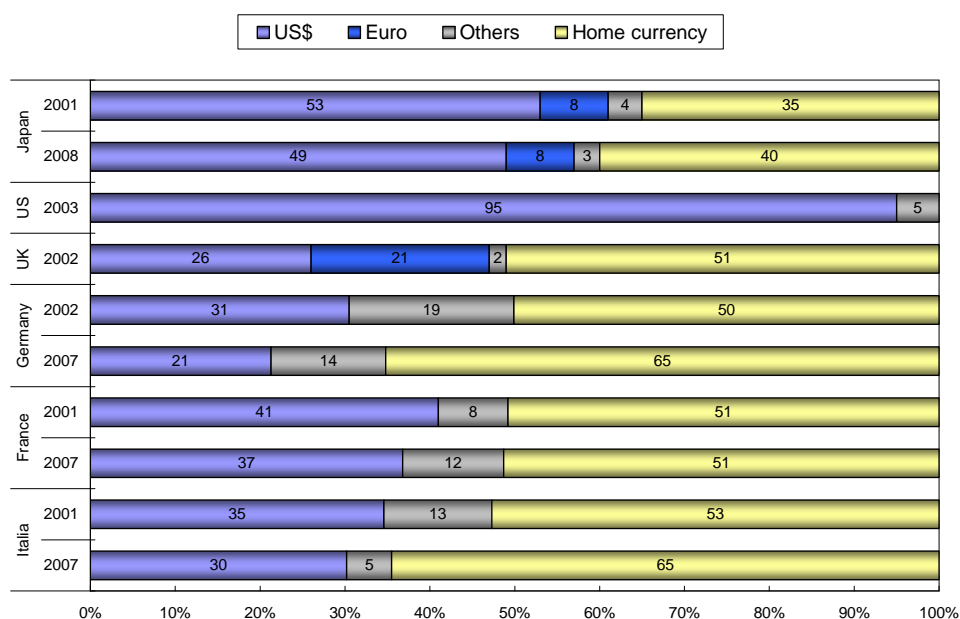
Note: Annual average data.

International Comparison of Currency Invoicing among Advanced Countries

In order to clarify the characteristics of currency invoicing in Japan, we need to investigate

the invoice currency choice in advanced countries. In particular, our main interest is in a unique pattern of currency invoicing in Japanese exports and imports. Figure 2-4 shows that the share of currency invoicing in exports in six advanced countries, including Japan. Two different periods' data, 2001 (or 2002) and the latest (2007 or 2008), are observed except for US and UK due to data constraint. Interestingly, the share of US dollar invoicing in exports was much higher in Japan than in other developed countries except for US. It was 53 percent in 2001 and slightly declined to 49 percent in 2008. Among European countries, the share of US dollar invoicing in Germany exports was the lowest. It was 31 percent in 2002 and declined to 21 percent in 2007. In Germany exports, the share of home currency (euro) invoicing rose 50 percent in 2002 to 65 percent in 2007. In other European countries exports, the share of US dollar invoicing declined and the share of home currency invoicing generally rose.⁸

Figure 2-4: International Comparison of Currency Invoicing
Advanced Countries: Export (%)



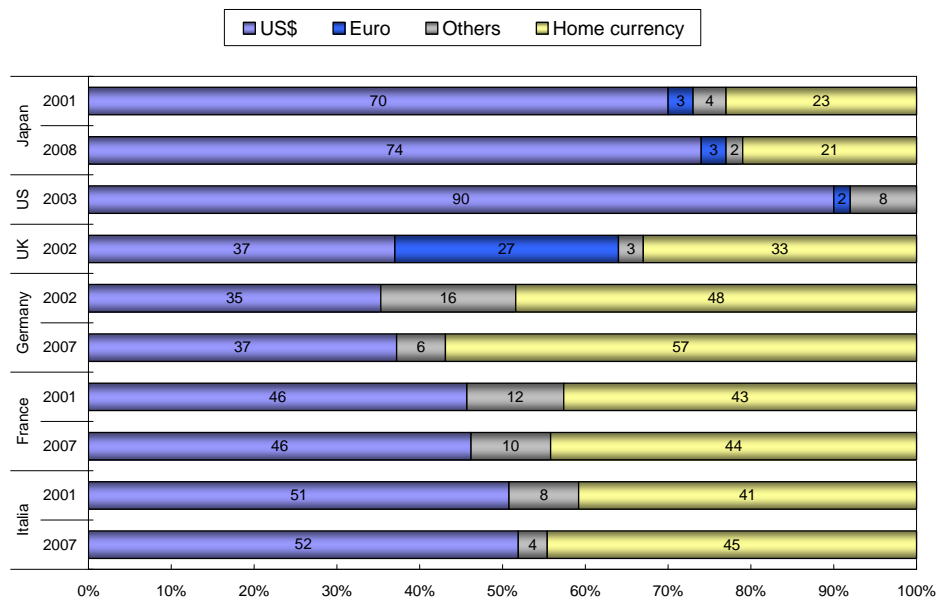
Source: Japanese data from Trade statistics of Japan by the Ministry of Finance and the Customs, US data from Goldberg and Tille (2005); Kamps (2006), UK data from National statistics, HM Customs and Excise, European data from European central bank

Notes: Data of Germany, France, and Italia are the currency composition of the goods exports and imports of the country vis-à-vis countries outside the EU.

⁸ From data of other EU countries published by ECB, the share of euro invoicing is larger than the share of US dollar invoicing in most EU countries including non-euro EU countries.

The Japanese unique pattern of the invoicing choice is more evident in the import side. Figure 2-5 shows that the share of US dollar invoicing is particularly high and that the share of home currency invoicing is the lowest in Japan's imports. In addition, these trends are even accelerating in 2008. In European countries, the shares of home currency invoicing in imports were lower than those in exports, which indicates that US and other exporters still continued to use the US dollar as their invoicing currencies to export to Europe. As Kamps (2006) analyzed, these data suggests that the role of the euro as vehicle currency is increasing but still limited compared to the US dollar.

Figure 2-5: International Comparison of Currency Invoicing
Advanced Countries: Import (%)



Source: Japanese data from Trade statistics of Japan by the Ministry of Finance and the Customs, US data from Goldberg and Tille (2005); Kamps (2006), UK data from National statistics, HM Customs and Excise, European data from European central bank

Notes: Data of Germany, France, and Italia are the currency composition of the goods exports and imports of the country vis-à-vis countries outside the EU.

Above figures indicate that the unique pattern of the Japanese currency choice, which contrasts markedly with the currency invoicing pattern of other developed countries. In the European countries, home currency invoicing appears prevalent because 50 percent or more of their exports were invoiced in the home currency in recent years, which is consistent with the classic stylized fact 1. In particular, the United States invoice most of its exports and imports in its own currency (US dollar), which may reflect the continuous role of the US dollar as a key currency in the international

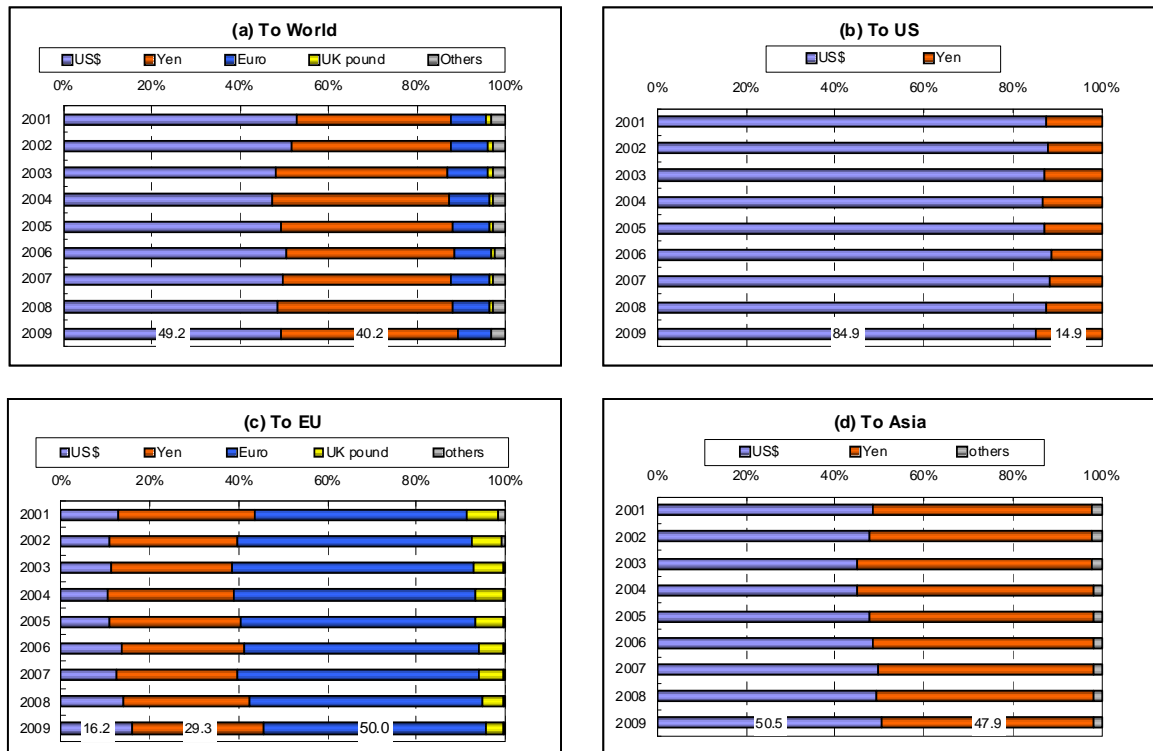
monetary system. Since the United States was the largest trading partner for Japan up to the 1980s and Japan was a large importer of crude oil and natural resources, it is no wonder that Japan's share of US dollar invoicing was very high in both exports and imports. However, in recent years, the East Asian countries become more important trading partners for Japan. It is interesting to examine whether the Japanese currency invoicing pattern differs across destinations and/or source countries.

Destination and Source Country Breakdown Data on Invoice Currency in Japan

Next, the destination and source country (region) breakdown data on currency invoicing in Japan's exports and imports are presented. The four destinations and source regions (countries) are covered in the data: the world total, the United States, EU and Asia. The sample period ranges from 2001 to 2009. Figure 2-6 shows the invoice currency breakdown of Japanese exports by destinations. As we observed in Figure 2-1, the patterns of invoicing currency share in three different destinations are completely different and remain unchanged during the sample period. In exports to US, the share of the US dollar invoicing stayed around 85 percent constantly. In exports to EU, the share of the euro stayed around 50 percent, while the share of the UK pound gradually declined from 7 percent to 4 percent. The share of the yen was less than 30 percent. The US dollar was still used around 15 percent for exporting to EU.

In exports to Asia, the share of yen invoicing has been extremely competitive against the share of the US dollar invoicing in 2000s. The share of the US dollar invoicing stayed around 50 percent constantly and there was no sign to change this tendency. Other Asian currencies were hardly used as an invoicing currency. The above observations strongly suggest that Japanese exporters conduct the PTM behavior by invoicing in the local currency in exports to US and EU while tend to use a vehicle currency (the US dollar) in exports to Asia.

Figure 2-6. Invoice Currency Breakdown of Japanese Exports by Destinations (%)



Source: Trade statistics of Japan by the Ministry of Finance and the Customs (Trade Settlement Currency Invoicing).

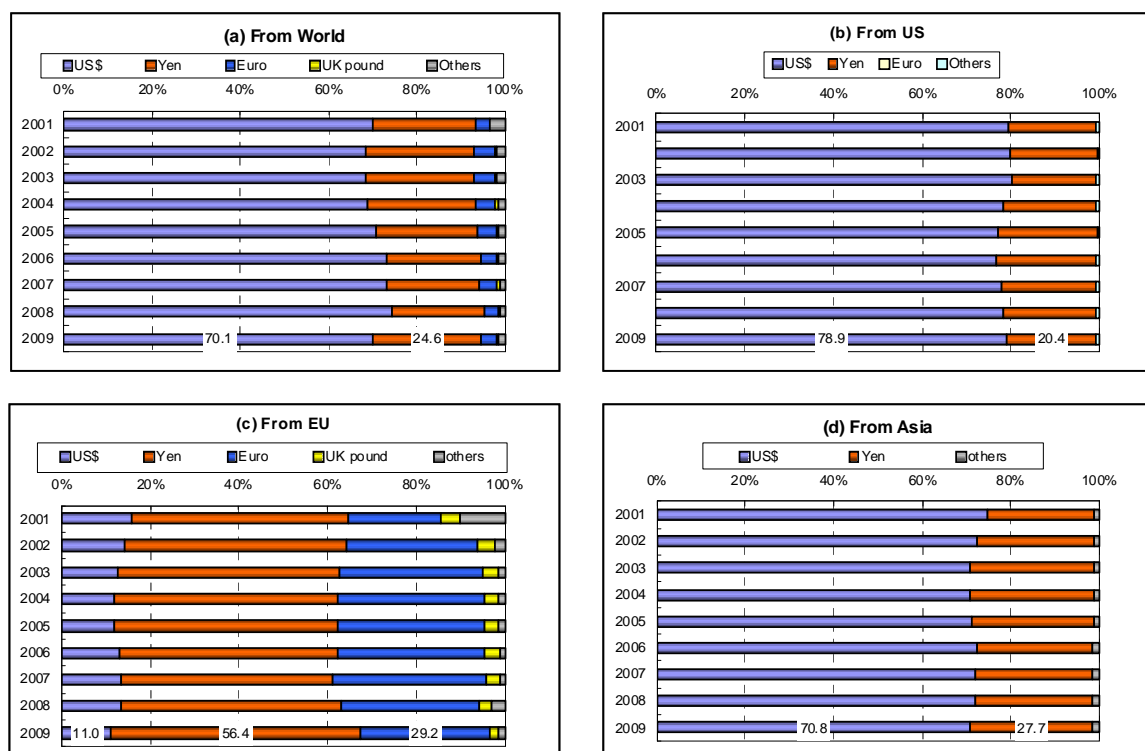
Note: Data in 2009 is semi-annual data of first half of 2009.

Figure 2-7 shows the invoice currency breakdown of Japanese imports by destinations. The US dollar is most used in Japanese imports and its share in imports to the world was above 70 percent even in 2009. In imports from US, the share of the US dollar invoicing was constantly around 80 percent. On the other hand, the share of yen invoicing was the highest in imports from EU. In 2009, the share of yen invoicing was 56 percent, the highest during the sample period and the share of the US dollar invoicing was 11 percent, the lowest. As Figure 2-3 indicated, the exchange rate of the Japanese yen vis-à-vis the euro moved largely in 2000s, the relatively high yen invoicing share has been promoted by PTM strategy of European exporters, which has tried to stabilize the price of European goods in Japanese market.

In Asia, more than 70 percent of imports from Asia are invoiced in US dollars and the share of yen invoicing remains at around 30 percent or less in the 2000s. The share of US dollar invoicing declined slightly from 2001 and it was 70.8 percent while the share of yen invoicing was 27.7 percent in 2009. Same as the case of exports, other Asian currencies were hardly used as an invoicing currency. As the classic stylized fact 3 suggests, the more imports of crude oils and raw materials are, the higher the share of the US dollar is in Japan's imports. Whereas Japan has long

been dependent heavily on imports of oils and raw materials, Japan's import pattern has structurally changed in recent years with a substantial increase in procurements of manufactured products from Asian countries. As the regional integration has been deepening and production network has been developed further by Japanese firms, the yen was expected to be more used in Japan's imports from Asia. However, Figure 2-7(d) indicates that the US dollar is still dominantly used in trade between Japan and Asian countries. Due to the Classic Stylized Fact 2, trade between developed and developing countries tend to be invoiced in the developed country's currency or the third currency (the US dollar) and it is confirmed that the later part of the Classic Stylized Fact 2 holds especially in Japanese import from Asia.

Figure 2-7. Invoice Currency Breakdown of Japanese Imports by Destinations (%) (%)



Source: Trade statistics of Japan by the Ministry of Finance and the Customs (Trade Settlement Currency Invoicing).

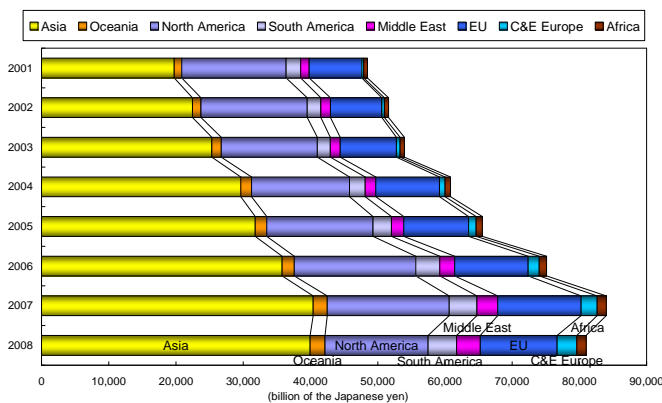
Note: Data in 2009 is semi-annual data of first half of 2009.

The shares of exports and imports value by destination and source regions also are presented below in order to compare invoice currency share and trade destination/source country share. Figure 2-8 shows Japanese trade share by regions. Both exports to Asia and imports from Asia have increased constantly from 2001 to 2007. Both declined slightly in 2008 due to the recent global financial crisis, however, their shares were the largest and kept almost half of Japanese exports and

above 40 percent of Japanese imports in 2008. To the contrary, both exports to US and imports from US have not changed largely in their value and their shares declined gradually as the total values of Japanese exports and imports increased from 2001 to 2008. Thus, Japanese trade structure has been gradually changed and it has shifted more Asian-dependent especially in export. However, such a movement does not seem to affect the share of currency invoicing. It is partly because the trades with Asian countries are still invoiced mainly in the US dollar, and partly because the trades with other area, such as Middle East, Oceania and South America, also are invoiced mostly in the US dollar. As the classic stylized fact 3 suggests that the imports of crude oils and raw materials are customary invoiced in the US dollar, it is hard to change the invoicing currency of such trades. Accordingly, trading with Asian countries might hold an important clue to promote more home currency invoicing in Japan.

Figure 2.8: The value of Japanese Trade by Region

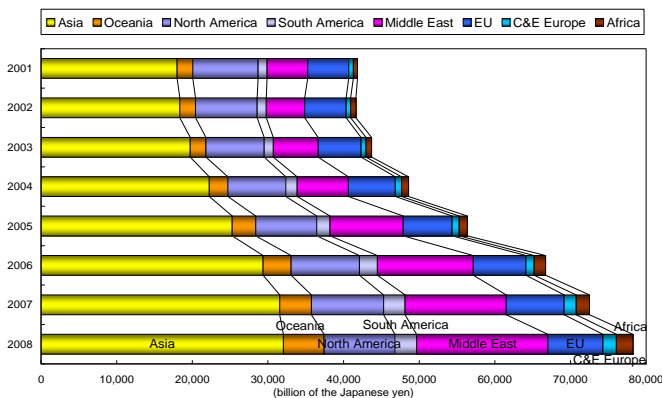
(a) Export



Share of Export by Major Region

	Asia	North America	EU	Middle East
2005	48.4%	24.0%	14.7%	2.8%
2006	47.5%	24.0%	14.5%	3.0%
2007	48.1%	21.6%	14.8%	3.7%
2008	49.3%	18.9%	14.1%	4.3%

(b) Import



Share of Import by Major Region

	Asia	North America	EU	Middle East
2005	44.4%	14.2%	11.4%	17.0%
2006	43.6%	13.4%	10.3%	18.8%
2007	43.2%	13.0%	10.5%	18.3%
2008	40.6%	11.9%	9.2%	22.0%

Source: Trade statistics of Japan by the Ministry of Finance and the Customs.

Note: Asia includes all Asian countries, such as China, NIEs, ASEAN, India and so on. North America includes US and Canada.

The descriptive analysis of this section provides us with interesting evidence on the Japanese currency invoicing pattern across 3 regions (countries). However, as long as we rely on the published data, it is difficult to analyze commodity or industry breakdown data on currency invoicing. An investigation of currency invoicing across far more destination/source countries will be necessary to shed light on the factors which prevent Asian countries to use their local currencies as an invoicing currency. One idea is to conduct the interview analysis with firms and to collect the data and information on their currency invoicing strategy. Our new findings on currency invoicing pattern of Japanese exporting firms will be presented in the next section.

2-2-2. Analysis of the factors behind the invoice and settlement currency in Japan

Interview with Major Japanese Exporting Firms

To explore the further information on the currency invoicing pattern of Japanese exporters, we conducted interview with 23 Japanese exporting companies in two consecutive years: the 1st interview was in 2007 (September–November 2007) and the 2nd interview in 2008 (July–December 2008)⁹. The 23 sample firms were chosen from four major machinery industries: automobile, electrical machinery, machinery, and electrical components. To avoid any sample selection bias, we first chose as many candidate companies as possible from the four industries. Then, we made interview with all companies that accepted our request of interview¹⁰. Before interview, we sent questionnaires to the treasurer's department of sample companies. In most cases, we made interview with the director of the treasurer's department¹¹.

Despite only 23 sample firms, their total foreign sales, which are proxy variables for scale of exports from Japan to abroad, account for 65 percent of that of all Tokyo Stock Exchange (TSE) listed firms in the same industries as of fiscal year 2007. Table 2-1 shows the share of our sample firms in the total TSE listed firms in terms of the number of firms and also of the foreign sales. Although its share is only 5 percent in terms of the number of firms, our sample firms account for 65 percent of total TSE listed firms in terms of the foreign sales.. A typical example is the automobile

⁹ The interview was conducted as a research project of The Research Institute of Economy, Trade and Industry (RIETI). The interview results discusses in this subsection are based on the results in two discussion papers titled "Currency Invoicing and Foreign Exchange Risk Management: A Case Study of Japanese Firms" (in Japanese, RIETI Discussion Paper, 08-J-009, April 2008) and "Determinants of Currency Invoicing in Japanese Exports: A firm-level analysis" (in Japanese, RIETI Discussion Paper, 09-J-013, June 2009).

¹⁰ As might be expected, it is very difficult to make an appointment with Japanese companies for interview. With the help of METI and RIETI, we could interview 23 machinery companies.

¹¹ For the rare occasion, the foreign sales division is in charge of the foreign exchange risk management. In this case, we interviewed the director of this division.

industry where our sample firms' share is 79 percent in terms of the foreign sales though only 11 percent in terms of the number of firms. Thus, our interview research provides us with a comprehensive picture of currency invoicing practices of Japanese major exporting firms, especially in the automobile and the electrical machinery industries.

Table 2-1. Foreign Sales in FY2007 of sample firms comparing with all listed firms in same industry

TSE industry classification	Transportation Equipments	Electric Appliance		Machinery	Total 3 industries
Number of listed firms reported foreign sales in FY2007	83	221		168	472
Foreign sales in FY2007 (Sum total of listed firms, billion yen)	61,958	48,366		11,455	121,781
Foreign sales / Consolidated sales (sample average, %)	46%	44%		43%	---
Sample firms by industry	Automobile	Electrical Machinery	Electrical Components	Machinery	Total sample firms
Number of sample firms [Percent to all listed firms]	9 [11%]	7 [3%]	4 [2%]	3 [2%]	23 [5%]
Foreign sales in FY2007 (Sum total of sample firms, billion yen) [Percent to all listed firms]	48,756 [79%]	26,379 [55%]	1,992 [4%]	2,115 [18%]	79,243 [65%]
Foreign sales / Consolidated sales (sample average, %)	67%	52%	68%	70%	---

1) In the Tokyo Stock Exchange (TSE)'s industry classification, "Transportation Equipments (Yuso-yo kiki)" includes companies related to automobiles, motorcycles, and shipbuildings, while "Electric Appliances (Denki Kiki)" mainly includes electrical machinery and electrical components.

2) In the Japanese accounting standard, all listed firms with more than 10% Foreign Sale-to-Consolidated sales ratio have to report the amount of foreign sales by region in the financial statement.

Source: Financial statements of all listed companies with "Foreign sales (Kaigai Uriage-daka)" in FY2007

Our interview research was conducted based on the questionnaire entries that are composed of the following four topics.

(1) Production and Sales Structure: To grasp each company profile, we asked the following questions: (i) Fundamental Structure of Production (Head Quarter, Overseas Factory, whether or not there are Overseas Subsidiary / Overseas Affiliate Company), (ii) Fundamental Structure of Sales (Overseas Sales Share by region, whether or not there are Overseas Sales Subsidiary / Regional Head Quarter / Trading through Japanese Trading Firms), (iii) Fundamental flow from production to sales (export) (distribution of goods / commercial distribution), (iv) Type of goods (Competitiveness, Market Share), (v) Basic policy on exchange rate risk management.

(2) Invoice Currency: Our main interest in this interview research is to collect the destination breakdown data on currency invoicing, since such data is rarely published, especially at a firm level. We first asked whether the invoicing choice varies in destination market or trading partner. Specifically, our question is which currency is used in (i) exports from Japan to each destination

country, (ii) exports from Japan to overseas sales and/or production subsidiaries, and (iii) exports from overseas production subsidiary to final destination markets. Furthermore, we questioned about whether several other factors affect the choice of invoicing currency, that is to say, whether invoicing choice is affected by (iv) inter- or intra-firm trade, (v) characteristics of products traded such as the degree of product differentiation,

(3) Exchange Rate Risk Management: We asked which hedging strategy they adopt (forward, future and options through market, marry and netting, etc.)

(4) Revision of Price Setting: We questioned about whether they periodically change the export price itself irrespective of invoicing choice. In addition, we asked whether they have any explicit policy of price revision in the face of sharp and large fluctuations of the exchange rate.

Analyzing interview results on the questionnaire, we derive new evidences of the currency invoicing patterns of major Japanese exporters, especially destination breakdown data on the share of invoice currency by industry.

Pattern of Currency Invoicing of Major Japanese Exporting Firms

Through interview, we obtained the detailed data on currency invoicing from most sample firms. To assure anonymity, the actual share of currency invoicing for each sample firm will not be presented. Instead, we employ the “main invoice currency” approach in this subsection. The main invoice currency is defined as the most frequently used currency in exports to the destination country. Our interview results reveal that a single currency tends to be used in exports to each destination. However, there are several firms that use two or more invoice currencies in exports to a single destination country, in which case the main invoice currency does not mean that the currency is 100 percent used in exports.

Table 2-2 shows the currency invoicing in exports from Japan to developed countries/region and Mexico and Russia. In this table, we count the number of firms that use one of four currencies as the main invoice currency for each destination. For instance, looking at the far left of the first row in Table 2-2, [20/22] indicates that 20 out of 22 sample firms use the importer's currency (US dollar) as the main invoice currency in exports to the United States. Industry breakdown data are also reported in the 2nd through 5th rows. No figures in the table mean that the firm does not export to the region/country in question, or that we could not get any clear answers about the main invoice currency.

Table 2-2. Currency invoicing in exports from Japan to North America, Europe and Australia

Status of dominant currency for exports by destination country and region

[Number of answer "yes" / Total number of answers]

Main currency for exports	Destination country or region						
	US	Canada	Mexico	Euro area	UK	Russia	Australia
Importer's currency	[20/22]	[8/10]	[1/5]	[14/21]	[6/8]	[1/3]	[7/7]
Automobile	8	4	1	6	4		4
Electrical machinery	7	3		5	2		3
Machinery	2	1		1		1	
Electrical components	3			2			
Exporter's currency (JPY)	[2/22]			[5/21]			
Automobile				1			
Electrical machinery							
Machinery	1			2			
Electrical components	1			2			
Third currency (USD)		[2/10]	[4/5]	[2/21]	[2/8]	[2/3]	
Automobile		1	2			2	
Electrical machinery		1		2	2 ¹⁾		
Machinery			1				
Electrical components			1				

1) Two eight electrical machinery companies answered that they use third currencies as a main invoice currency for exports to the UK. One company mainly uses US dollar while other uses Euro.

Source: Answers through interview with 23 major Japanese exporters in Ito, Koibuchi, Sato, and Shimizu (2009)

Table 2-2 shows that the choice of the main invoice currency by destination and by industry in 2007-2008. First, importer's currency invoicing is prevalent in Japanese exports to developed countries. In exports to the United States, 20 out of 22 firms use the US dollar as the main invoice currency. In exports to the Euro area, 14 out of 21 firms choose the euro as the main invoice currency, while the yen is the main invoice currency for 5 firms. The importer's currency is evidently chosen even in exports to UK, Australia and Canada.

Second, in contrast to the case of developed countries, the importer's currency is rarely used in Mexico and, possibly, Russia. Instead, the US dollar is chosen as the main invoice currency in both countries.

Third, even in exports to the United States and the Euro area, several Japanese firms in machinery and electrical component industries use the exporter's currency (Japanese yen) as the main invoice currency. Interestingly, the electrical machinery firms do not use the Japanese yen at all as the main invoice currency.

The above observation indicate the strong tendency of Japanese major exporting firms to use the importer's currencies as the main invoice currency in exports to developed countries, which conforms to the PTM behavior discussed in the literature. From a standpoint of the foreign exchange

management, the importer's currency pricing means that the foreign exchange risks are taken and managed by the headquarter of Japanese exporting firms.

Next, let us turn to the choice of the main invoice currency in Japanese export to Asia / Asian countries, which is summarized in Table 2-3. First and the most distinctive feature is that, in exports to Asia as a whole, the importer's currency is never used as the main invoice currency. When looking at the invoicing choice for each destination, the importer's currency is sometimes used as a main currency. However, in exports to China that is the largest market in the region, the Chinese yuan is not used at all as the main invoice currency.

Table 2-3. Currency invoicing in exports from Japan to Asia

Status of dominant currency for exports by destination country and region
[Number of answer "yes" / Total number of answers]

Main currency for exports	Destination country or region									
	Asia ¹⁾	China	Thai	Indonesia	Singapore	Malaysia	Korea	Hong Kong	Taiwan	India
Importer's currency										
Automobile			1	1			1	1		
Electrical machinery			1		1	1				
Machinery										
Electrical components						1				
Exporter's currency (JPY)	[9/22]	[5/11]	[3/6]	[2/5]		[1/4]	[1/4]	[1/2]		[2/2]
Automobile	5	3	2	2		1		1		1
Electrical machinery										
Machinery	3	2	1				1			1
Electrical components	1									
Third currency (USD)	[13/22]	[6/11]	[1/6]	[2/5]	[6/7]	[1/4]	[2/4]		[2/2]	
Automobile	3		1	1						
Electrical machinery	7	3			2	1	1			
Machinery				1	1				1	
Electrical components	3	3			3		1		1	

1) "Asia" includes East Asia countries (China and Hong Kong, Korea, and Taiwan) and ASEAN countries. It also includes India if the sample firms export their

Source: Answers through interview with 23 major Japanese exporters in Ito, Koibuchi, Sato, and Shimizu (2009)

Second, sample firms dominantly use either the third currency (US dollar) or the exporter's currency (Japanese yen) as the main invoice currency. 13 out of 22 firms choose the US dollar, while 9 firms use the Japanese yen. In China, Indonesia, and Thailand, where many sample firms have important production and sales subsidiaries, the US dollar or the Japanese yen are dominantly used, although 2 out of 6 firms choose the importer's currency as the main invoice currency in exports to Thailand.

Third, the choice of invoice currency varies across industries. The electrical machinery and the electronic components firms tend to adopt the US dollar, while the automobile firms tended to choose the Japanese yen. More interestingly, the machinery firms dominantly use the Japanese yen in their exports to Asia, which contrasts markedly with the electrical machinery and the electronic component firms,

Our descriptive analysis clearly suggests that the importer's currency invoicing is rarely observed in exports of sample firms to Asia. In contrast, US dollar invoicing and, to a lesser extent, Japanese yen invoicing are dominant in Japanese exports to Asia.

The interview also provides us the actual share of currency invoicing for each sample firms as shares of US dollar, Japanese yen and Euro in their total exports to the world and Asia. Table 2-4 summarizes the industry breakdown share of currency invoicing in exports. Sample mean and median (in parenthesis) of invoicing share for each industry are reported. Whereas we obtained the detailed data on currency invoicing through interview, all sample firms did not answer the share of currency invoicing in exports to the World and Asia. 14 out of 23 firms answered the invoicing share in exports to the world and 18 out of 23 firms in exports to Asia. For the rest of sample firms, we reasonably assess the share of currency invoicing. For instance, some firms did not show us the invoicing share in exports to the world, but provided us with the information on the invoicing share corresponding to exports share of North America (the United States), the Euro area and Asia. In this case, we obtained the regional breakdown data on their foreign sales from the annual securities report of the sample firms concerned, which enables us to compute the firm's invoicing share in exports to the world with the reasonable assumption that the firm's exports are destined for the above three regions¹². As a result, the data for 21 firms are used to calculate the average share of invoice currency in exports to the world, and the data for 22 firms in exports to Asia.

The average share (all sample firms) of currency invoicing in exports to the world was 51.6 percent for the US dollar, 14.0 percent for the euro, and 29.9 percent for the yen, which is consistent with the invoicing share in Figure 2-6 although the share of the yen is lower in Table 2-4 (29.9 percent) than in Figure 2-6 (39.4 percent in 2008). Even in the average share (all sample firms) of invoicing choice in exports to Asia, the share of the yen is somewhat lower in Table 2-4 (41.8 percent) than in Figure 2-6 (47.9 percent in 2008) and the share of the US dollar is higher in Table 2-4 (55.6 percent) than in Figure 2-6 (50.4 percent in 2008).

The third and fourth columns of Table 2-4 show the average share of foreign sales in total sales and the regional breakdown of the share of foreign sales¹³. On average of total sample firms, 61.8 percent of their sales are bound for foreign countries where Asia accounts for the largest share, that is, 39.1 percent in total foreign sales. When looking at the share of foreign sales by industry, the share for the machinery and the electrical component industries is high and close to 70 percent. Interestingly, the share of foreign sales in Asia is very high in the machinery (48.2 percent) and the

¹² Because of the lack of information, we could not assess the invoicing share reasonably for 2 electrical machinery firms, whose data were treated as a missing value.

¹³ "Foreign sales by region" reported in the consolidated financial statement of the annual securities report is not identical to the export from Japan to each region, because the former includes the data on the sales of overseas subsidiaries in the local market and/or abroad. Nevertheless, "foreign sales by region" can be regarded as a proxy variable for the share of exports from Japan to each region. For the details, see Ito, Koibuchi, Sato, and Shimizu (2009).

electrical component (57 percent) industries.

Table 2-4. Share of currency invoicing for exports by currency

Unit: %

Sample firms	Share of currency for exports from Japan to world ²⁾			Share of currency for exports from Japan to Asia ²⁾		Share of sales abroad to total sales ³⁾	Share of sales abroad by region ⁴⁾		
	USD	EUR	JPY	USD	JPY		North America	Europe	Asia
All sample firms	51.6 (50.6)	14.0 (15.0)	29.9 (25.0)	55.6 (57.5)	41.8 (32.2)	61.8 (68.1)	27.6 (28.3)	25.5 (25.9)	39.1 (37.5)
Automobile	40.0	15.3	36.9	32.6	65.6	64.8	31.1	23.3	31.1
Electrical machinery	70.9	15.3	12.6	93.0	6.4	52.6	32.5	34.9	32.5
Machinery	28.3	10.0	61.7	20.0	80.0	69.8	22.0	22.7	48.2
Electrical components	71.1	12.5	12.2	88.8	9.4	67.8	19.1	20.8	57.0

1) Figures by industry show sample average. Sample average and sample mean (in parentheses) are reported for all sample firms.

2) "Share of currency for exports" are calculated as sample averages using sample firms' answer on exports by currency. For some sample firms that we can not get authors' calculation based on information from sample firms' answers. "Share of currency for exports from Japan to world" are data from 21 sample firms excluding two electrical machinery exporters which did not give us any share data for currency invoicing. As for "Share of currency for exports from Japan to Asia", we report data from 22 sample firms excluding one electrical machinery exporter.

3) "Share of sales abroad to total sales" are calculated as the share of overseas sales in each region to total overseas sales. Each data are collected from the consolidated financial statement report of the latest accounting term correspond to the interview research period (the fiscal year end of 2006 or 2007).

Source: Answers through interview with 23 major Japanese exporters in Ito, Koibuchi, Sato, and Shimizu (2009) and their financial statements

As for the industry breakdown data on invoicing choice, we can find the following notable pattern. First, in Japanese exports to the world, US dollar invoicing is particularly high in the electrical machinery and the electrical component industries, where more than 70 percent of exports are invoiced in US dollars. In contrast, in the machinery industry, 61.7 percent of exports to the world are invoiced in the exporter's currency (Japanese yen)¹⁴. In the automobile industry, the share of the US dollar (40 percent) is slightly higher than that of the Japanese yen (36.9 percent) in their exports to the world.

Second, turning to exports to Asia, a difference in invoicing choice across industry becomes more evident. The share of US dollar invoicing is 93 percent in the electrical machinery industry and 88.8 percent in the electrical component industry, while the share of Japanese yen invoicing is 80 percent in the machinery industry. More interestingly, the share of Japanese yen invoicing in exports to Asia becomes much higher in the automobile industry.

Third, Table 2-4 does not show any clear relationship between the invoicing share and the share of foreign sales by region. Specifically, the share of foreign sales in North America does not seem to affect the share of US dollar invoicing. Although the share of foreign sales in North America

¹⁴ For the machinery industry, the average share is calculated from the data of 5 firms (to world) and 6 firms (to Asia).

exceeds 30 percent in the automobile and the electrical machinery industries, the share of US dollar invoicing is far higher in the electrical machinery industry than in the automobile industry. Moreover, although the share of foreign sales in Asia is very high in the machinery and the electrical component industries, the invoicing pattern is completely different between the two industries.

Factors behind the Currency Invoicing of Major Japanese Exporting Firms

A notable advantage of our interview analysis is to conduct a face-to-face discussion with the chief of treasurer's department of each firm concerning the firm's explicit policy/strategy of invoicing choice, exchange rate risk management, and price setting. We obtained a great deal of information that is compactly summarized in Table 2-5 and Table 2-6.

Table 2-5. Policy for currency invoicing

	Number of firms to answer "yes"				
	All sample firms	Automobile	Electrical machinery	Machinery	Electrical components
Number of sample firms	23	9	7	3	4
A. Reasons for choice of invoice currency					
(a) Reasons why the company chooses the local currency invoicing for exports to developed countries					
(a-1) Trade partners in North America and Europe are local subsidiaries with high equity participation from the home office in Japan	9	6		2	1
(a-2) To gather exchange rate risk into the head office in Japan and overseas subsidiaries with ability of exchange rate risk management	7	2	2		3
(a-3) High degree of the market competition in developed countries	2	1	1		
(a-4) Increasing share of costs in terms of local currency due to extended localization of production	1			1	
(b) Reasons why the company does not choose the local currency invoicing for exports to Asian countries					
(b-1) Trade partners in Asia are local subsidiaries or joint venture with low equity participation from the home office in Japan	4	3		1	
(b-2) High transaction cost of Asian local currency due to various regulations and restrictions	4	1	2		1
(b-3) Local subsidiaries in Asia are able to manage exchange rate risk	1	1			
(c) Reasons why the company chooses the Yen invoicing for exports					
(c-1) Yen invoicing is common in the case of exports through Japanese trading companies	6	4	2		
(c-2) Dominate share of costs in terms of Yen due to high concentration of R&D activity and key parts production in Japan	2			1	1
(c-3) Strong bargaining power based on high competitiveness of the company's product	3	1		1	1
(c-4) Customers demand Yen invoicing	3			1	2
(d) Reasons why the company chooses the US dollar invoicing for exports					
(d-1) Transaction costs of US dollar are lowest among currencies	5	3	1	1	
(d-2) US dollar invoicing is more preferable than Yen invoicing in the US dollar-peg countries	1		1		
(d-3) Electronic goods and natural resources are usually traded by US dollar in the international markets.	5		1	2	2
(d-4) Trades with processing trading ports like Singapore and Hong Kong are settled by the US dollar	1		1		
(d-5) Unifying the invoice currencies to US dollar to exploit the merits of many and netting in the company	6	2	3		1
(d-6) Trade structure exporting from production subsidiaries in Asia to USA / US firms	4		3		1

Source: Interview results in Ito, Koibuchi, Sato, and Shimizu (2009)

Table 2-6. Exchange rate risk management and price setting

	Number of firms to answer "yes"				
	All sample firms	Automobile	Electrical machinery	Machinery	Electrical components
Number of sample firms	23	9	7	3	4
B. Exchange rate risk management					
(e) Hedging strategy					
(e-1) Rarely used	5	3	1	1	
(e-2) Mainly exchange rate forward	13	5	4	1	3
(e-3) Mainly exchange rate option and other derivatives	2	1		1	
(f) Extent of exposure covered by the hedging					
(f-1) Full hedging	3	1	1	1	
(f-2) 70%	2	1	1		
(f-3) 50%	3	1	1	1	
(f-4) Depending on the market conditions	1	1			
(g) Length of period covered by the hedging					
(g-1) 1-2 months	1	1			
(g-2) 3-6 months	3	1	2		
(g-3) half year	2	2			
(h) Marry and netting					
(h-1) We use marry and/or netting to manage exchange rate risk	17	6	7	1	3
C. Price setting					
(i) Rule of price setting when substantial exchange rate fluctuations					
(i-1) No, we do not have the explicit rule.	13	5	2	2	4
(i-2) Yes, we have the explicit rule.	4	2	2		
(j) Product differentiation and market share					
(j-1) High degree of product differentiation and dominant share of market enable us to accomidate exchange rate fluctuations on price.	6	3	1	1	1

Source: Interview results in Ito, Koibuchi, Sato, and Shimizu (2009)

Based on sample firm's interview results, we have derived the following six main determinants, (i)-(vi), of currency invoicing for exports of major Japanese exporters.

(i) Intra-/ inter-firm trade and the trade through trading company

As we discussed status of choice of currency invoicing in Table 2-2 and Table 2-4, for exports to developed countries like the US and Europe, major Japanese exporters gather exchange rate risk into the head office in Japan and free their local subsidiaries from exchange rate risk by choosing

importer's currency as an invoice currency. Contrary to exports to developed countries, major Japanese exporters rarely use the local currency for exports to Asia, most of which are developing countries, and choose major currency (US dollar or Japanese yen) instead. In this situation, exchange rate risk between local currency and major currency is still left in local subsidiaries in Asian countries.

According to the interview results summarized in Table 2-5, Japanese exporters freeing their local subsidiaries in developed countries from exchange rate risk usually have high degree of equity participation in local subsidiaries in developed countries (a-1). Thus, in the case of major Japanese companies having the production and/or distribution bases in developed countries, most of exports from Japan to these countries are occupied by intra-firm trades destined for 100% local subsidiaries. Therefore, they have little motive for imposing exchange rate risk on trade partners and, in many cases, they consider that it is efficient to gather exchange rate risk into its treasury department in head office that are used to manage it (a-2).

On the other hand, local subsidiaries in developing countries including Asia are usually joint ventures with local companies or local distribution agencies. This is partly because regulations and restrictions on capital investment by foreign companies entering domestic markets still exist in many Asian developing countries. Major Japanese exporters recognize that their head office in Japan does not need to incur all of exchange rate risk unless their equity participation to local subsidiaries is near 100% (b-1). Therefore, in the case of low equity participation to local subsidiary, the company tries to impose exchange rate risk on its joint venture or local agency by choosing Japanese yen rather than local currency.

Moreover, there are some firms that trade through Japanese trading companies in exports to developing countries including Asian countries. Though many firms answer that they choose Japanese trading company as a trading partner mainly because of acquiring distribution channel and business partners in developing country, they also answer that they can impose exchange rate risk on the major Japanese trading company that is used to take exchange rate risk by choosing Japanese yen as a transaction currency (c-1).

Summarizing above, presently major Japanese exporters have globally expanded production and sales structure, and they actively export goods through the intra-firm trades. Under these circumstances, the Japanese exporters are willing to gather exchange rate risk into their head offices (treasury departments) with organization to efficiently manage the risk. It is the degree of equity participation from the head office in Japan to its local subsidiary in order to determine whether the trade is categorized by intra- or inter-firm. If the head office in Japan has large equity share on local subsidiary like a 100% consolidated subsidiary, the company tends to choose local currency invoicing in the trade between the head office and the local subsidiary. On the other hand, in the trade to local subsidiary with low equity participation and joint venture that are generally

observed in Asian developing countries, and trades through the trading company, local currency is not used as an invoice currency.

(ii) Cost of exchange rate hedging

Many sample firms point out that transaction cost or hedging cost of currency is one of the most important factors for choosing invoice currency. Local currencies of developing countries including most of Asian countries are inferior to major currencies in terms of availability mainly due to various regulation and restriction, and accompanied with extremely high hedging cost against exchange rate fluctuations (b-2). By contrast, US dollar is considered as a currency with lowest transaction cost for local subsidiary in Asia even if exchange rate risk between US dollar and local currency is still left in the local subsidiary (d-1).

(iii) The degree of market competition and differentiation of exporting products

The degree of market competition and differentiation of exporting products are also important factors to choose invoice currency. According to the McKinnon's hypothesis discussed in Section 2-1, differentiated products tend to be invoiced in the exporter's currency. In the interview results, many Japanese exporters, especially automobile makers and electronic machinery firms, point out that it is too difficult to impose exchange rate risk on importers in developed countries like the US and Europe due to high degree of competition in the markets (a-3). By contrast, a firm having largest market share in developing country answers that its local subsidiary affords to manage exchange rate risk even if the company chooses Japanese yen as an invoice currency in trade between the head office and the local subsidiary (b-3). These answers suggest that the degree of market competition and product differentiation can affect choice of invoice currency for major Japanese exporters. Moreover, in the price setting, they consider that higher product differentiation and market share enable them to impose large exchange rate fluctuation on the transaction price reflecting stronger bargaining power against their importers (j-1).

Some of machinery firms and electronic components firms, which might have competitive and highly differentiated exporting products in the global market, succeeded to impose exchange rate risk on importers in exports not only to Asia but also to all countries/regions including developed countries by choosing Japanese yen as a invoice currency. These firms clearly recognize that higher competitiveness and differentiation of their product lead to stronger position in the negotiation on choice of currency invoicing with customers worldwide (c-3).

(iv) The share of exporting products customarily traded in US dollar

Many of electric machinery firms and electric component firms point out that many of major products of electronics customarily traded in US dollar in the global market, and US dollar invoicing is prevalent regardless of production base and destination (d-3). Moreover, even in trades with customers in Asia, as long as these customers are major US electronic machinery firms (or, in many cases, large Korean and Taiwan electronic machinery firms exporting their goods destined to US markets), US dollar is commonly used as an invoice currency worldwide. Some machinery firm answers that similar custom exists in the mining industry, and thus mining goods are commonly traded in US dollar since these good are priced in terms of US dollar in the global market. These evidences strongly suggest that vehicle currency role of US dollar apparently exists in the trade of some specific goods like electronic products and mining products.

(v) Exports from Asian production base to the US market

Most of electrical machinery and electrical components firms, which adopt US dollar invoicing in exports to Asian countries, have a trade structure from production bases in East Asian countries to the US market or US firms as destination. Under this production/distribution structure, in the commercial distribution from Asian plants to the US/ US firms, the firms usually choose US dollar as an invoice currency considering currency matching from plants to destination (d-6).

For example, typical production and sales structure observed in many Japanese exporters, especially companies in the electrical machinery, is that they produce key components in Japan and general-purpose components in other Asian countries, assemble them in plants in China, and then export final goods to US customers through their local distribution subsidiaries in the US. This production/sales structure (physical distribution) mainly consists of three stages of commercial distributions: 1) exporting key components from Japan to China; 2) intra-firm trade of final goods from China to local subsidiary in the US; 3) sales of final goods from US local subsidiary to final customer in the US. In the final stage, final goods are traded by the US dollar because of high degree of market competitiveness and difficulty of product differentiation of electronic goods. Therefore, following the choice in final stage, the company chooses US dollar as an invoice currency in the second and first stage of distributions considering the currency matching and gathering exchange rate risk into its head office as much as possible.

Moreover, for reducing exposures against exchange rate risk as efficiently as possible, some of major electric machinery firms and electric component firms adopt some device of commercial distribution called as "re-invoice" by Japanese exporters, which means that the company once reckons the sales of final goods assembled in China to the home office in Japan and then reports "exports" of these goods to local subsidiary in the US, keeping physical distribution

unchanged. Under this accounting device, the company can minimize exchange rate risk exposure against US dollar, which originally arises from the US dollar trades with final customers in the US, as long as the company unifies all currency invoicing at the all stage of distribution within group firms into US dollar.

(vi) Explicit policy of choosing a specific currency for invoicing

Many sample firms recognize that unifying the invoice currency into single currency like US dollar brings about large benefit of marry and netting within group firms in order to offset exchange rate risk exposures (d-5). These firms have the explicit policy on single currency use (US dollar) in every transaction within group firms

Actually, major Japanese exporters are reducing the exposure on exchange rate risk by actively using various instruments within firms including marry and netting. The 17 out of 23 sampled firms are conducting marry and/or netting (h-1). The number are almost equivalent to number of firms (15 firms in (e-2) and (e-3)) using hedging strategy through the market including exchange rate forward, options and derivatives. The evidence of heavy reliance on instruments to manage exchange rate risk within company rather than those through the market strongly suggests that 1) hedging instruments through the market are still accompanied with substantial transaction costs for the company using various types of invoice currencies and, therefore, 2) there are substantial benefits for the company unifying invoice currency into a single currency, US dollar in most cases, and conducting marry and netting within group firms

Summary of Empirical Results of Currency Invoicing Decision at a Firm Level

In our empirical analysis, we adopt several explanatory variables to investigate the determinants of currency invoicing in Japanese firms. The Most basic variable is “share of foreign sales in the region (North America, Europe, and Asia) over the total overseas sales”, which does not only directly indicate the importance of destination for export but also the degree of competition of these markets that is associated with the possible determinant (iii). Additionally, we use the following explanatory variables as a proxy of the main determinants of currency invoicing, which were cited in the previous section.

The first group is the explanatory variables associated with the determinant (i) “intra- or inter-firm trade and the trade through trading company”. We adopt the explanatory variables, which represent the types of trading partners, export to the group companies (intra-firm trade), export to the non-group companies (inter-firm trade), or export through the general trading company (*Sogo*

Shosha). Since major Japanese exporters recognize that their head offices in Japan do not need to incur all of exchange rate risk unless their equity share of local subsidiaries are near 100%, we set the dummy variable “dummy for the equity share of overseas subsidiary (> 90%)” 1 if firm *i* they have overseas subsidiaries with more than 90 % shares of equity in *k* region, and 0 if not. Furthermore, the trading through *Sogo Shosha* is recognized as a factor to promote exporting in terms of the Japanese yen since the settlement between exporters and them is usually executed in terms of the Japanese yen. Then we set the dummy variable “dummy for trade through *Sogo-Shosha*”.

The second group is the explanatory variables associated with the determinant (ii) “cost of exchange rate hedging”. We use the bid-ask spread of forward outright transaction between the Japanese yen and the exporting country’s currency as a straightforward proxy for the cost of exchange rate hedging.

The third group is the explanatory variables associated with the determinant (iv) “the share of exporting products customarily traded in US dollar”. Because electronic goods are customarily traded in terms of the US dollar in the international markets, we set the dummy variable “dummy for firms producing electronics goods”, which represents the strong tendency of trading in terms of the US dollar on a global basis.

The fourth group is the explanatory variables associated with the determinant (v) “exports from Asian production base to the US market”. We set “dummy for firm’s plants in Asia to export” 1 if the Intra-firm sales from Asia (=exports to subsidiaries outside Asia) to foreign sales in Asia (=sales to Asian customers) is over 50 %, and 0 if not. Additionally, we adopt “share of overseas sale to the US market” as a proxy for the firm that exports its products from subsidiaries in Asia to the final destination, the US.

The Last group is the explanatory variables associated with the determinant (vi) “explicit policy of choosing a specific currency for invoicing”. We adopt “dummy for USD invoicing policy” for the firms who unify their invoice currencies to US dollar in order to exploit the merits of marry and netting in the whole group companies and “dummy for JPY invoicing policy” for the firms whose product differentiations and market competitions are strong enough to choose the Japanese yen as an invoice currency for export not only to Asia but also to developed countries.

Using the above explanatory variables classified in six groups, we conduct the probit estimation with the main export currency and the share of invoice currency as an explained variable. The overview of empirical results is reported in Table 2-7. (For more detailed results and further discussions, see Appendix 2-1 in this subsection.)

Table 2-7. Brief summary of empirical results in Ito, Koibuchi, Sato, and Shimizu (2009)

Determinants of Currency Invoicing	Explanatory Variables	Sign of Estimated coefficient of explanatory variable and its statistical significance ¹⁾		
		Importer's Currency invoicing [Probit]	USD invoicing in exports to Asia [Probit]	Share of JPY invoicing in all exports [OLS]
(i) Intra-/ inter-firm trade and trade through trading companies	Equity participation to overseas subsidiary or its dummy (>90%)	(+) Significant	(+) Significant	(-) No significant
	Dummy for trade through Sogo Shosha	---	(-) Significant	(+) Significant
(ii) Cost of exchange rate hedging	Forward spreads (%)	(-) Significant	(+) No significant	---
(iii) The degree of market competition	Share of overseas sales in the region	(+) Significant	(?) No significant	(?) No significant
(iv) The share of exporting products customarily traded in US dollar	Dummy for goods of electronics	---	(+) Significant	(-) Significant
(v) Export from Asian production base to the US market	Share of overseas sales in North America	---	(+) Significant	(-) Significant
	Dummy for plants in Asia to export	---	(+) Significant	(-) Significant
(vi) Explicit policy of choosing a specific currency for invoicing	Dummy for USD invoicing policy	---	---	(-) Significant
	Dummy for JPY invoicing policy (proxy for exporters with differentiated products)	---	---	(+) Significant

1) (+), (-) and (?) mean that sign of estimated coefficient of explanatory variable are positive, negative and ambiguous, respectively. "Significant" and "No significant" mean their statistical significance, where "Significant" indicates that the estimated coefficient of the explanatory variable is statistically significant in all or most of specification. "---" indicates that the explanatory variable is not included in the model.

Source: Ito, Koibuchi, Sato, and Shimizu (2009)

First and second column of Table 2-7 include six possible determinants and associated explanatory variables. In the last column, we reports sign of estimated coefficients of explanatory variables and their statistical significance in each model of estimation. Three models are estimated in Ito, Koibuchi, Sato, and Shimizu (2009). The first model is the probit estimation to test determinants of importer's currency invoicing of sample firms in exports from Japan to developed countries (US and EU or North America and European countries and Australia), where dependent variable is a binary variable that takes 1 if the importer's currency is used as the main invoice currency and 0 otherwise. The second is also the probit estimation to test determinants of third currency (US dollar) invoicing of sample firms in exports from Japan to countries in Asia, where dependent variable is a binary variable that takes 1 if the US dollar is used as the main invoice currency and 0 otherwise. The final is the OLS estimation regressing the share of importer's currency (Japanese yen) in all

exports to abroad of the sample firms on various explanatory variables.

"Equity participation to overseas subsidiary" totally has statistically significant positive impacts on both of import's currency invoicing in exports to developed countries and US dollar invoicing in exports to Asian countries while there is no significant impact on share of importer's currency (Japanese yen) in total exports. As we discussed in the determinant (i), the Japanese exporting firms that gave globally expanded production and sales bases are willing to gather exchange rate risk into their head office with organization to efficiently manage the risk by choosing importer's currency of developed countries or US dollar, which is most useful vehicle currency for Japanese subsidiaries in Asia, as long as exporting goods are traded through the intra-firm trade. "Dummy for trade through Sogo Shosha", proxy for inter-firm trades, also has statistically significant negative impact on US dollar invoicing in Asia and significant positive impacts on total share of the Japanese yen invoicing. These results are consistent with determinant (i), which asserts the difference between intra- and inter-firm trades is an important factor to determine the currency invoicing patterns.

"Forward spread" of import's currency has statistically significant negative impact on currency invoicing while there is no significant impact on US dollar invoicing in exports to Asia. This evidence shows that lower transaction costs of currency actually promotes more use of importer's currency invoicing in exports to developed countries. Determinant (ii) actually functions as a factor to choose the invoice currency.

Most basic variable "share of overseas sales in the region" has statistically significant positive impact on importer's currency invoicing in exports to developed countries while almost no impacts on US dollar invoicing in Asia and share of Japanese yen invoicing. Combined with strong impact of explanatory variables associated with the determinants (i) and (ii), this result is consistent with strong tendency of PTM behavior of major Japanese exporting companies.

Determinants (iv) and (v) are examined in both of US dollar invoicing in exports to Asia and the share of Japanese yen invoicing.

"Dummy for goods of electronics" that is proxy for the determinant (iv) (the share of exporting products customarily traded in US dollar) has statistically significant positive impact on US dollar invoicing in Asia and statistically negative impact on the share of Japanese yen invoicing in total exports to abroad. Both of "Share of overseas sales in North America" and "Dummy for plants in Asia to export" have statistically significant positive impacts on US dollar invoicing in Asia and significant negative impact on share of Japanese yen invoicing in total exports. These results strongly supports the view that typical production and sales structure observed in many Japanese electrical companies promotes US dollar invoicing in Asia and suppresses Japanese yen invoicing in exports from Japan to abroad.

Finally, the determinant (vi), "company's explicit policy of choosing a specific currency

for invoicing", is examined only in the share of Japanese yen invoicing. "Dummy for Japanese yen invoicing policy", which is also a proxy for exporters with differentiated products, has statistically significant positive impact on the share of Japanese yen invoicing in total exports while "Dummy for US dollar invoicing policy" has statistically significant negative impact.

Summary of the Case of Japan

This subsection examines a firm-level pricing behavior of Japanese exports to present new evidence and determinants of invoice currency. We interviewed 23 major Japanese exporting firms to collect information on their currency invoicing behavior and also on their explicit policy/strategy of the choice of the invoice currency. Through interviews with 23 major Japanese firms, we found that Japanese electronics and automobile companies have a strong tendency to choose local currency invoicing in exports to advanced countries, while U.S. dollar invoicing is largely used when exporting to East Asian countries, especially in exporting electronics products. Such an invoicing strategy aims at stabilizing the local currency (U.S. dollar) price of their export products in local markets of the developed (Asian) countries, which conforms to the pricing-to-market behavior discussed in the literature.

We also propose six possible determinants of currency invoicing in Japanese exports: (i) intra- or inter-firm trade; (ii) cost of exchange rate hedging; (iii) the degree of market competition and differentiation of exporting products; (iv) the share of exporting products customarily traded in US dollars; (v) exports from Asian production base to the US market; (vi) explicit policy of choosing a specific currency for invoicing. We checked whether these possible determinants actually function as factors to determine the currency invoicing patterns of major Japanese exporting firms by cross-section OLS and probit estimation.

Our novel findings are three-fold. First, importer's currency invoicing is prevalent in Japanese exports to developed countries. Since most exports of sample firms are destined for local subsidiaries that face severe competition in the local markets, Japanese parent firms have a strong tendency to take an exchange rate risk of their local affiliates by invoicing the importer's currency, which is consistent with the pricing-to-market behavior discussed in the literature. Second, a large share of exports of electronics products that are customarily invoiced in US dollars promotes US dollar invoicing even in exports to non-US markets. Third, although Japanese firms have shifted their production bases to Asian countries, exports from these Asian bases tend to be invoiced in US dollars as long as the final destination market is the United States. Thus, exceptionally small share of domestic currency (yen) invoicing in Japanese exports even in the 2000s is largely due to the development of Japanese production and trade structure in Asia driven by Japanese electronics companies.

Appendix 2-2. Empirical Results for Determinants of Currency Invoicing at a Firm Level

Probit Estimation on the Determinants of Currency Invoicing

We empirically investigate the relationship between the choice of invoice currency and the possible determinant variables we derived through the interview analysis. Since the importer's currency invoicing is prevalent in Japanese exports to the developed countries as discussed in Section 4, our main interest is in analyzing in which currency Japanese exports are invoiced, the exporter's currency (the yen) or the importer's currency. Thus, we conduct probit estimation to analyze the determinants of currency invoicing, where the dependent variable is a binary variable that takes 1 if the importer's currency is used as the main invoice currency and 0 otherwise.

First, the results of estimation when exporting to the United States, Europe and Asia are presented in columns (1)-(4) in Table A-1. As a key determinant of currency invoicing, we use (i) the forward spreads of the importer's currency against the yen as a proxy for hedging cost between the importer's currency and the yen, (ii) the share of the sales in the region in the total foreign sales to measure how important the region is as an export market for the sample firms, and (iii) the head office's equity share of local subsidiaries as a measure of intra-firm trade. In columns (1)-(4), the forward spreads are negative and statistically significant at least at the 10 percent level, which indicates that the larger the hedging cost is, the less the importer's currency is used for trade invoicing. This also explains why importer's currency invoicing is more prevalent in exports to developed countries than to Asian countries, given that hedging cost is much larger in Asian emerging countries than in developed countries. In columns (2)-(4), the effect of sales in the region is added to investigate whether the invoicing choice is affected by the extent of export dependence on the destination market. These are all positive and statistically significant at least at the 10 percent level. Furthermore, to allow for the effect of intra-firm trade, the head office's equity share of local subsidiaries and its dummy (>90 percent) are, respectively, included in columns (3) and (4). These are also significantly positive at the 5 and the 1 percent level, respectively, which strongly supports our hypothesized relationship that intra-firm trade facilitates importer's currency invoicing.

Second, columns (5) and (6) show the results of probit estimation when including only the United States and the Euro area as a destination market. Forward spreads are not used as an explanatory variable in this estimation, because there is little difference in hedging cost between the US dollar and the euro. In columns (5) and (6), both the share of foreign sales in the region and the head office's equity share of local subsidiaries (and its dummy) do affect positively and significantly the choice of the importer's currency.

Third, in columns (7) and (8), the following 6 countries (regions) are included as the export destination: the United States, Canada, Mexico, the Euro area, the United Kingdom, and Australia. Although the share of foreign sales in the region does not have a significant effect,

forward spreads do affect negatively the choice of invoice currency at the 5 percent significance level in columns (7) and (8). The dummy of the head office's equity share of local subsidiaries shows a positive coefficient, but it is not statistically significant.

Table A-1. Determinants of importer's currency invoicing

Dependant variable: Binary variable that takes 1 if importer's currency is major currency, or 0 otherwise

Method: Probit Estimation

Sample	US, Europe and Asia				US and Europe		Countries in North	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Forward spreads (%)	-90.48* (46.72)	-103.04** (47.92)	-144.9** (68.56)	-165.8** (73.72)			-1.844** (0.717)	-1.794** (0.707)
Share of overseas sales in the region		4.252* (2.446)	7.091** (3.242)	6.918** (3.238)	4.660* (2.445)	4.449* (2.362)		
Equity participation to overseas subsidiary			7.872** (3.485)		4.997* (2.681)			
Dummy for equity participation to overseas subsidiary (>90%)				2.054*** (0.763)		1.423** (0.566)		0.291 (0.352)
Constant	2.240*** (0.797)	1.362 (0.871)	-6.004* (3.233)	0.227 (1.079)	-5.033* (2.786)	-1.405* (0.800)	0.985*** (0.191)	0.791*** (0.299)
# of Observations	65	65	65	65	43	43	73	73

Overall, the results of the probit estimation reveal that the importer's currency is used as invoice currency, if (i) the hedging cost of the importer's currency is lower, (ii) the importing country is more important export destination for sample firms, and (iii) there exist the local subsidiaries the head office's equity share of which is high. Japanese exporting firms tend to free their overseas subsidiaries from the exchange rate risk and also to conduct the exchange settlement intensively at the treasurer's department in the head office. In addition, if they have their local subsidiaries in a destination country, Japanese exporting firms tend to export not to foreign customers directory but to their own local subsidiaries by invoicing in the local (importer's) currency so that the local subsidiaries will not take the exchange rate risk. Such importer's currency invoicing is more likely if the destination market is highly competitive or if the sample firm's export dependence is high on the destination market.

Table A-2. Determinants of USD invoicing for exports from Japan to Asia

Dependent variable: Binary variable that takes 1 if USD is main currency, or 0 otherwise
 Method: Probit Estimation

Sample	Countries in Asia				
	(1)	(2)	(3)	(4)	(5)
Forward spreads (%)	2.370 (2.665)				2.921 (3.885)
Dummy for equity participation to overseas subsidiary (>90%)	1.458** (0.637)	1.402** (0.587)			2.179** (1.008)
Dummy for trade through Sogo Shosha	-2.051** (0.661)	-2.397*** (0.786)			-1.120 (1.636)
Share of overseas sales in Asia		-1.693 (1.404)		4.546 (2.867)	
Share of overseas sales in North America			3.808** (1.890)	11.949** (4.856)	8.177* (4.487)
Dummy for goods of electronics				1.440** (0.710)	1.133 (1.625)
Dummy for plants in Asia to export			0.939** (0.437)	1.065* (0.638)	0.654 (0.710)
Constant	-0.560 (0.745)	0.683 (0.660)	-1.406** (0.577)	-6.218** (2.476)	-4.214* (2.513)
# of observations	40	40	40	40	40

We next conduct similar estimation focusing on Asian economies, where Japanese firms have built a regional production network. In this estimation, the destination is the following eight economies: Mainland China, Korea, Hong Kong, Singapore, Malaysia, Indonesia, Thailand and the Philippines. Since the US dollar is dominantly used and the local currency is rarely used in Asian economies as discussed in Section 4, our main interest is in investigating which currency is chosen for trade invoicing in Japanese exports to Asian economies, the US dollar or the yen. In conducting probit estimation, the dependent variable is a binary variable that takes 1 if the US dollar is used as the main invoice currency and 0 otherwise, the results of which are presented in Table A-2.

First, in contrast to the results for developed countries (Table A-1), forward spreads do not have significant effect on the choice of invoice currency, as shown in columns (1) and (5). The dummy for the head office's equity share of local subsidiaries affects positively the invoicing choice at the 5 percent significance level in columns (1), (2) and (5), which implies that Japanese firms, which have local subsidiaries in Asia with more than 90 percent equity share, tend to choose US dollar invoicing.

Second, the dummy for trade through Sogo Shosha (trading companies) indicates a negative and significant coefficient at the 1 or 5 percent significance level (columns (1) and (2)). Although it is said that the role of Sogo Shosha has been declining in Japanese exports, our interview analysis has found that exports through Sogo Shosha still play a certain role when the destination is developing countries including some Asian countries. The results of our estimation suggest that the share of US dollar invoicing will be decreasing when exporting through Sogo Shosha, because the

exporting firms sell their products in the yen to Sogo Shosha.

Third, the share of foreign sales in Asia does not have any significant effect on the invoicing choice (columns (2) and (4)). However, when including the share of foreign sales in North America as an explanatory variable, the coefficient takes a positive and significant value at the 5 percent level in column (3). This additional explanatory variable is especially important because Japanese production subsidiaries in Asia or other Asian firms tend to export their finished products to the US market. In column (4), we add the dummy for electronics goods traded to the probit estimation, because electronics products are a typical example that finished products are exported to the US market after regional processing trade in Asia. The coefficient of the dummy for electronics goods traded is significantly positive in column (4). Moreover, the dummy for plants in Asia to export is also included as an explanatory variable that represents the export from Asian production base to the US market. The coefficient of this Asian plant dummy is positive and statistically significant at least at the 10 percent level in columns (3) and (4). This result does support our hypothesized relationship that exports from Asian production base to the US market facilitate US dollar invoicing in Japanese exports to Asian countries.

Finally, when including all explanatory variables except the share of foreign sales in Asia, the dummies for electronics goods and for Asian plants show positive but insignificant coefficients in column (5). However, the dummy for the head office's equity share of local subsidiaries and the share of foreign sales in North America do take positive and significant coefficients. It is fair to say that the dominant role of the US dollar for trade invoicing even between Japan and Asia can be attributed to the growing intra-firm trade based on the regional production network and also to the large dependence of regional exports to the United States.

Estimation on the Determinants of Exporter's Currency Invoicing Share

We conduct the OLS estimation regressing the share of Japanese yen invoicing in total exports to abroad on various explanatory variables. The results are reported in Table A-3.

First, in column (1), share of overseas sales in Asia has no significant impact on Japanese yen invoicing share. Instead, the share of overseas sales in North America, a proxy for exports to the US market, has statistically significant negative coefficients in all specification from (2) to (8), which means that exporting company with higher exposure against the exports to the US has lower share of Japanese yen invoicing in total exports. Second, dummy for goods of electronics that are customarily trade by US dollar in the global markets, has significantly negative coefficient in column (4), (5) and (8) at 1% or 5% level. We can observe the shares of Japanese yen invoicing of the electrical machinery and components companies are more than 30% below comparing to other industries.

One of the notable results in Table A-3, in column (6) and (7) that include dummy for

plants in Asia to export, its estimated coefficient (around -0.3) has statistically significant negative sign at 5% level. Combined with the significantly negative sign of dummy for US dollar invoicing policy, these evidence strongly suggest that the exporting companies with distribution network from Asian production base to the US market has strong tendency to decrease their share of Japanese yen invoicing.

Table A-3. Determinants of JPY invoicing share

Dependant variable: Share of JPY invoicing (All exports from Japan to World)

Method: OLS

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Share of overseas sales in Asia	0.488 (0.289)							
Share of overseas sales in North America		-1.079*** (0.344)	-1.006** (0.359)	-0.935*** (0.262)	-0.850*** (0.243)	-0.761** (0.326)	-0.635** (0.296)	-1.057*** (0.310)
Dummy for equity participation to overseas subsidiary in Asia (>90%)		-0.281** (0.128)	-0.236 (0.141)					
Dummy for trade through Sogo Shosha			0.106 (0.132)					
Dummy for goods of electronics				-0.375*** (0.079)	-0.344*** (0.074)			-0.308** (0.123)
Dummy for plants in Asia to export						-0.278** (0.103)	-0.255** (0.093)	-0.070 (0.123)
Dummy for USD invoicing policy					-0.184* (0.089)		-0.259** (0.109)	
Dummy for JPY invoicing policy				0.286** (0.118)	0.240** (0.110)			
Constant	0.109 (0.128)	0.667*** (0.119)	0.605*** (0.142)	0.697*** (0.099)	0.709*** (0.091)	0.644*** (0.107)	0.659*** (0.096)	0.773*** (0.108)
# of observations	21	21	21	21	21	21	21	21
Adj-R ²	0.084	0.341	0.328	0.649	0.705	0.403	0.525	0.537

As for explicit policy of the company, we observe that exporting firms more pursuing strategy for choosing US dollar as a single invoice currency has lower Japanese yen invoicing share (the column (5) and (7)). On the other hand, companies exporting highly differentiated goods and having strong bargaining power against price setting has larger share of Japanese yen invoicing in total exports (the column (4) and (5))

2-3. The characteristics and their background of invoice and settlement currency choice in Indonesia, Thailand and Singapore

2-3-1. The case of Indonesia

Data on Indonesia's international trade shows that the US dollar is the major invoicing

currency for Indonesian exports. About 90% of total exports are in the US dollar. By destination, almost 100% of exports to the US are in the US dollar. Recent data shows that only 9% of exports to Europe are in the Euro and only about 10% of exports to Asia are in Asian currencies. The use of the Indonesian Rupiah (IDR) as an invoicing currency in all exports is very limited. It has never reached 2.5% in the last ten years. The data on Indonesian imports shows a similar situation; that the major currency used as the invoicing currency is the US dollar. Indonesian firms simply choose the US dollar in their foreign trade transactions due to history, hedging motives, and market rules. There is weak evidence of a relationship between the choice of the invoicing currency and product differentiation, whether the product is final goods or parts, and whether they are exported directly or through trading companies. From Indonesian perspective, the Japanese yen and the Chinese renminbi meet the requirements to play the role as a vehicle currency for international trade among Asian countries.

2-3-2. The case of Thailand

The US dollar is the most widely used currency in international trade transactions. Less than 7 % of exports are denominated in Thai Baht. The ratio varies substantially among industries. The ratio of imports denominated in Thai Baht is lower than that for exports. The increase in the use of the Euro stems from both increased trade with the EU member countries and its use as a vehicle currency (third country's currency). As a vehicle currency, the use of the U.S. dollar was more prevalent than the Euro, but the Euro's share increased in both export and import transactions during the period 2001-2008. The share of Thai Baht in Thailand's exports has grown with the increase in Thailand's trade with other ASEAN countries. It implies that increases in intra-ASEAN trade would encourage the use of local currencies, the Baht in the case of Thailand.

2-3-3. The case of Singapore

According to the interviews with 15 Singapore-based exporters and importers, although the US dollar is the dominant invoicing currency in exports and imports, the Japanese yen and Singapore dollar are also accepted. In addition, it seems that the trading country currency is more prevalent in imports to than exports from Singapore. The interviews also suggest a lukewarm attitude towards a greater use of the local currency, as the majority of the interviewees were of the opinion that the US dollar will continue to be the most relevant invoice currency in the future.

References

See the references in Chapter 1.

Chapter 3 : Internationalization of Asian currencies

3-1. Introduction

This chapter reviews internationalization of the Japanese yen from its historical point of view by focusing on the deregulation of foreign exchange and capital controls as well as the recent development of internationalization of the Chinese renminbi. It also examines the use of Euro in trade transaction in Europe in order to draw lessons to East Asia from the perspective of internationalization of the currency.

3-2. Internationalization of the Japanese yen

3-2-1. Internationalization of the yen as a foregoing example

Before deliberating on the possible measures to facilitate a wider use of local currencies in the transactions in East Asia, this chapter reviews the experience of the internationalization of the yen as a foregoing example.

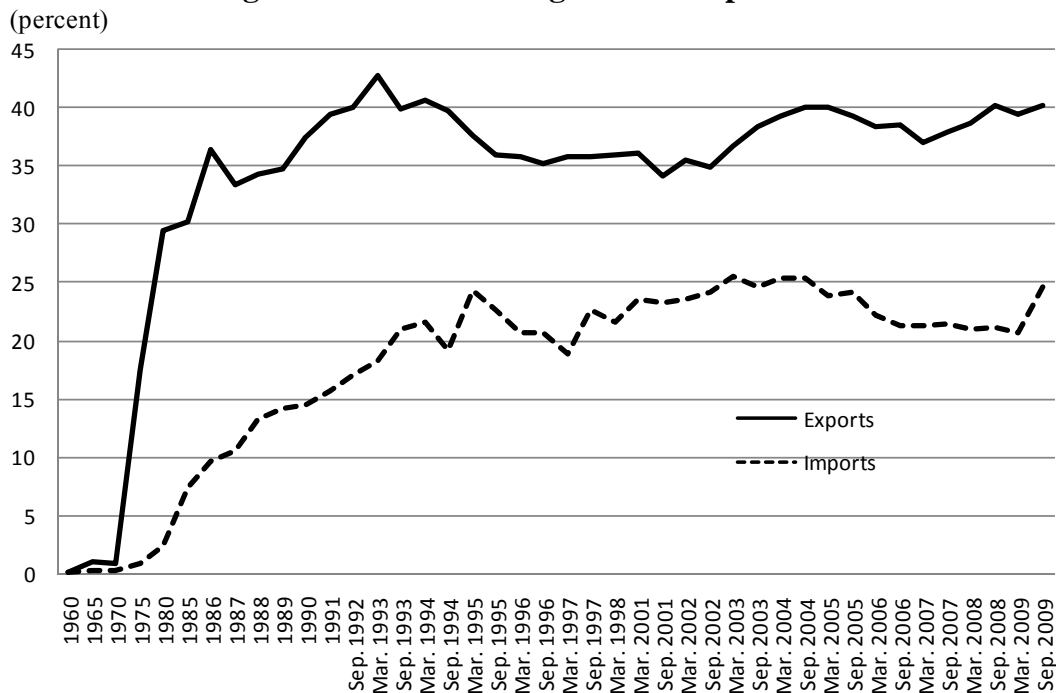
The internationalization of the yen may be represented by the higher share of its use in international trade and holdings of assets. Its way of use can be divided into three aspects of trades in goods and services, capital transactions and foreign exchange reserve holdings.

The internationalization of the yen had and has been promoted with the expectation of contributing to reducing foreign exchange rate risks in international transactions of the Japanese companies, strengthening the international competitiveness of the Japanese financial institutions through their ample expertise in the transactions in yen, and developing the Japanese financial and capital markets into one of the international financial centers.

Through the process of liberalization and deregulation of Japanese foreign exchange and capital controls over the years, the Japanese yen gained full convertibility at the end of 1970s. Along with the expansion of the share of the Japanese economy in the world economy, the use of the yen in international transactions also expanded to a certain extent in 1980s. Since 1990s, however, its expansion almost came to halt and in some dimensions we see the world share of the transactions in yen had shrunk (Figure 3-1).

The following sections will review the history of liberalization of foreign exchange and capital controls up to the yen's achievement of full convertibility. It will also review the policy measures taken under the Government's initiative for the internationalization of the yen and the various arguments on the background why the use of the yen in trade and other international transactions did not spread as expected.

Figure 3-1: Yen invoicing share of Japan's trade



Source: Ministry of Finance, Trade Statistics of Japan; and other sources

3-2-2. Liberalization and deregulation of foreign exchange and capital controls relating to the internationalization of the Yen

Although they differ a bit among the economists, the conditions and requirements for a currency to be widely used in international transactions can generally be summarized as follows: i) a substantial international presence of its issuing country in economic and other aspects, ii) the convenient and better usability of the currency in international transactions, and iii) the stability of the value of the currency.

This section discusses the requirements specifically focusing on the second condition, i.e., the convenience and better usability of the currency in international transactions.

What will be the necessary condition for the yen to be used in international transactions including trade? It is the easiness of yen-denominated transactions between resident and nonresident and free convertibility between the yen and foreign currencies. That means the yen's achievement of full convertibility status.

In the context of the internationalization of the yen, several steps of deregulations of foreign exchange and capital controls were taken to make the yen fully convertible currency. They included: the establishment of Free Yen Accounts for Nonresidents in 1960, the amendment of

1980 of FEFTCA (Foreign Exchange and Foreign Trade Control Act), US-Japan Yen Dollar Committee of 1984, and the amendment of 1998 of FEFTA (new Foreign Exchange and Foreign Trade Act). This section details the above four events and draws some lessons from the events.

(1) Establishment of Free Yen Account for Nonresidents in 1960

In the post-war Japan, the foreign exchange and trades were strictly controlled by the government, but after becoming a member of the IMF in 1952 on the Article 14 status, Japan accepted in 1964 the obligations under the Article 8 of the Agreement which requires no restrictions on current transactions.

Prior to this transition to Article 8 status, Japan started in July 1960 to liberalize the yen-denominated transactions by nonresidents. The Ministry of Finance took measures to authorize the residents to use the yen in overseas settlement of transactions and at the same time permitted foreign banks and other nonresidents to open in Japan the Nonresident Free Yen Accounts through which they can settle the yen-denominated transactions. Details of the measures are as follows:

- The free-yen accounts may be opened at the authorized foreign exchange banks located in Japan
- No restriction shall be applied on the types of the accounts
- The money that may be credited to the accounts includes:
 - Payments made in yen by residents to settle the current transactions such as Japanese imports of goods and services
 - Payments in yen by residents to make overseas remittance of dividends and other payments authorized by the Foreign Capital Act
 - Yen currency received in exchange for the foreign currencies sold to the banks by nonresidents
 - Transfers from other Free-Yen Accounts
 - Interest on the Free-Yen accounts

The measures that gave the yen a kind of convertibility, albeit limited, marked the starting point for the internationalization of the yen. However, exports and imports denominated in yen accounted for only 0.1% of the totals respectively in 1960, and remained almost unchanged through the 1960s without showing any meaningful improvement (see Figure 3-1). Several factors can be cited for this snail's progress. Although the yen deposits were allowed to nonresidents, the foreign exchange and capital controls basically remained very restrictive for making international transactions. As the yen was fixed to the US dollar, the incentives to make yen-denominated contract were not so strong. Japan's presence in the world economy was still limited (small) despite its rapid growth in the 1960s.

One thing to emphasize here is that permitting to credit to Free Yen Account of “the yen equivalent of the foreign currency sold by nonresident to the banks” paved the way to the inflow of euro-money to Japan. To prevent and manage the influx of hot money through Free Yen Accounts, only authorized foreign exchange banks in Japan were permitted to accept the accounts. In the beginning, the volumes of the influx of short-term money through the Free Yen Accounts were not so large and therefore thought to be controllable.

However, as the influx through Free Yen Accounts began to account for a substantial part of the total short-term capital inflows, it became an important challenge for the authorities to deal with and manage the volatile international capital flows. Actually, in the unstable international monetary situation in 1970s due to the collapse of the fixed exchange rate regime that gave the way to floating exchange rate regime and the twice oil shocks, the regulations on the Free Yen Accounts swayed from strengthening at one time to restrain the inflows of short-term capital and to softening at the other to encourage its inflows through the Free Yen Accounts, reflecting the rise and fall of international short term capital flows.

(2) Amendment of FEFTCA (Foreign Exchange and Foreign Trade Control Act) of 1980

Following the rapid accumulation of balance of payment surplus since the spring of 1977, avoidance of frictions on international economic relations became an important political issue. The Japanese government announced in early 1979 its intention to change the foreign exchange related laws and regulations from “prohibition in principle” to “permission in principle” and made their comprehensive amendments in December 1979 which were put into force in December 1980. The main amendments included the followings.

- Explicit stipulation of free principles of external transactions
The Act explicitly stipulated that it is the basic principle that external transactions including foreign exchange, foreign trade, etc can be made freely (without authorization).
- Liberalization of capital transactions and introduction of emergency regulation
Capital transactions were essentially liberalized under the prior notification system. Emergency regulation can be invoked on such occasions as when the maintenance of the equilibrium of the balance of payment is to be jeopardized, when the capital flows incur volatile fluctuations of the foreign exchange rate, and when massive movements of capital negatively affect the domestic money and capital markets.
- Liberalization of services and other related transactions
- Payments and receipts of payments were essentially liberalized
- Exports of means for payments were basically liberalized.

The revision of the FEFTCA transformed the domestic financial markets that had been shielded from the international markets into internationally open ones with ballooning cross-border capital flows. As a result, interest rate disparity was dissolved between domestic interest rates (such as repo rates) and Euro-yen rates (interest rates on the yen in the overseas market). This was one of the factors that prompted the liberalization of domestic interest rate structure, as the postwar structure of restricted interest rates could not be maintained since the domestic markets got directly influenced by the overseas markets.

(3) US-Japan Yen Dollar Committee of 1984

In the autumn of 1983, the increasing trade surplus of Japan against the US triggered arguments on closed character of Japanese financial and capital markets and appropriateness of Yen-Dollar exchange rate level and posed big political issues for the two governments. Consequently, an agreement was reached in November 1983 between the two finance ministers of the US and Japan to establish so-called “Yen-Dollar Committee.” On the Japanese side, the Ministry of Finance had prepared its policy report “Current Situation on and Prospects for Financial Liberalization and the Internationalization of the Yen” to be released in April 1984. Accordingly, the report was released in May 1984 along with the release of the “Report of US-Japan Yen Dollar Committee.”

The former report deliberated on such issues as the liberalization of interests on deposits, deregulation of the banks’ business hours and branch locations, creation of Yen denominated BA (bankers’ acceptance) market, and authorization of trust business for foreign banks. It also proposed as a means for the internationalization of the yen such measures as abolition of real demand principles for foreign exchange transactions (whereby a forward exchange contract needed to correspond to a bona fide transaction), liberalization of foreign lending in the yen, abolition of restriction on banks to convert foreign currencies into the yen (regulations on so-called “yen conversion,” in other words, ceiling was set spot open positions (not overall positions) of authorized foreign exchange banks), abolition of designated securities companies, and creation of Tokyo Offshore market. The report of the US-Japan Yen Dollar Committee mainly deliberated on the issues of liberalization of interest rates, entry into Japanese financial and capital markets by foreign institutions, and Euro-yen markets, and presented their basic philosophy on them and recommended measures to be adopted in the future by the Japanese government. Reflecting these efforts and negotiations, the real demand principle was abolished in April 1984 and the restriction on so-called “yen conversion” was abolished in June 1984, thus facilitating the liberalization of overseas lending denominated in yen as well as lending and issuing securities denominated in Euro-yen. Entry of foreign financial institutions into trust business and their acquisition of the membership at the Tokyo Stock Exchange were also permitted.

(4) Amendment of FEFTA (Foreign Exchange and Foreign Trade Act) of 1998

In May 1997, new Foreign Exchange and Foreign Trade Act was enacted and put into force in April 1998. The revisions included such comprehensive liberalization as:

- Liberalization of foreign exchange business: Authorized foreign exchange banking system through which foreign exchange transactions were to be carried out and authorization and permissions were delivered was abolished and entry into and exit from foreign exchange business were freely made by any market participants.
- Liberalization of capital and other transactions: Prior authorization and/or notification requirements were essentially abolished so that capital transactions and their settlements can be freely made with the overseas counterparts.
- Upgrading of after the-fact-reporting system; Efforts were made to upgrade the reporting system on the after-the-transaction basis in order to collect data on capital transactions for the purpose of compilation of the balance of payments statistics as well as for the accurate monitoring of the market situation.

With such positive revisions, this amendment was ascribed as the frontrunner for the Japanese version Big Bang that followed.

It was in November 1996 that the then Prime Minister Hashimoto advocated the reform of Japanese financial system with the three principles to pursue of “Free” market that is guided by the market principles, “Fair” market that is transparent and reliable, and “Global” market that is open to the world and even goes ahead of the other markets. This reform was called “Japanese version Big Bang” equivalent to the British securities market reforms in 1986.

For the “Free” market, new entry was encouraged into banking, securities and insurance fields to bring in new dynamism; restrictions were abolished on the financial products which were regulated between long-term products provided by long-term credit banks and short-term ones provided by the ordinary banks; to meet the needs of the consumers, provision of wider range of products and services was encouraged through expanding the business fields for the banks and securities companies; provision of diversified services at diversified prices was encouraged by liberalizing the fees and commissions; free inward and outward cross-border transactions were expected through abolition of authorized foreign exchange banking system; deregulation of the restrictions on asset management business was expected to induce effective management of private savings amounting to ¥1200 trillion to divert to investment.

For the “Fair” transactions, establishment of self responsibility principle was emphasized by requiring financial institutions comprehensive and expanded disclosure obligations and for that purpose their provision of sufficient information as well as clarification of rules.

For the “Global” market, laws and regulations were to be introduced to help develop the

derivative products and accounting system was adjusted to meet the international standards. Also was pursued Cooperation system for the global supervision of financial institutions.

Most of these proposals or recommendations were incorporated in the Financial System Reform Act of 1998 and other following laws and measures and accordingly implemented. The revision of Foreign Exchange and Foreign Trade Control Act in May 1997 was prompted independently from the Japanese version Big Bang initiatives and rather marked a kind of finishing touch on the deregulation of international transactions. Yet it surely played the role of frontrunner in leading and promoting the Japanese version Big Bang.

(5) Summary

The revision of the FEFTCA of 1980 can be considered as the most important event in the process of the Yen towards full convertibility. Owing to this revision, the capital transactions were allowed to be freely made across the Japanese borders, bringing in an active flow of funds which in turn dissolved the interest differentials between Euro-yen rates and domestic yen rates. This clearly demonstrated that the loans in yen and exchanges of the yen for foreign currencies were freely made between residents and nonresidents, leading to an active interest rate arbitrage. Such a situation could be deemed as a final phase in deregulation of foreign exchange and capital controls to achieve the internationalization of a currency.

Generally speaking, the progress in the 1980s of the internationalization of the yen is considered to be related to the amendment of the FEFTCA of 1980. Furthermore, the shift to the floating exchange rate system seemed to have given a big influence on the economic rationality for conducting the transactions denominated in yen rather than in dollar.

When East Asian countries try to promote deregulations on their foreign exchange and capital controls, the above Japanese experience would suggest that the attainment of the market condition where interest rate arbitrage works well would constitute a trigger for start. Of course it should be pointed out that the additional deregulations that followed also contributed to the internationalization of the yen through increasing the convenience in using the yen internationally.

In summary, the Japanese experience would tell the following lessons.

Firstly, although the deregulation and liberalization of Japanese foreign exchange and capita controls proceeded in tandem with the economic development, it should be noted that there was an argument that the process was substantially influenced by the needs to mitigate the excessive pressure for an appreciation of the yen as well as the needs to deal with foreign demands for reducing Japan's large current account surplus. Especially it seems that the amendment of FEFTCA in 1980 and the establishment of Japan-US Yen-Dollar Committee strongly reflected such demand from abroad to reduce the current account surplus. Although it is doubtful from the viewpoint of

economic rationality that the deregulation of foreign exchange and capital controls would contribute to reducing the current account surplus, the surplus did constitute the background behind the political demands from abroad for the deregulation of the regulations.

Secondly, it is an unavoidable process in promoting the internationalization of a domestic currency to permit the nonresidents to hold deposit denominated in that currency. When permitted, however, this will also increase the possibility to encourage greater cross-border capital movements using the nonresident accounts which in turn might induce a large scale of capital flows to influence the foreign exchange rate and domestic interest rate.

Thirdly, the liberalization of foreign exchange and capital controls in Japan also facilitated the domestic financial liberalization. In promoting the liberalization, therefore, it is necessary to contemplate the general framework of deregulation, not only of foreign exchange and capital controls but also of various regulations including domestic financial liberalization.

3-2-3. Public approach toward the internationalization of the yen: Centering on the discussions at the Foreign Exchange Council

Along with the deregulation and abolition of foreign exchange and capital controls, efforts were made to internationalize the yen. They included the followings:

April 1999: The Foreign Exchange Council submitted the policy proposals in its report of “Internationalization of the Yen for the 21st Century”.

The Council, identifying the internationalization of the yen as an objective to be pursued, deliberated on the basic policy agenda on what Japan must do to enhance the international role of the yen against the background of changes in domestic and international economic and financial setting including the Asian currency crisis, the emergence of the euro, and the progress of Japan’s “Big Bang.” It recommended the improvement of financial and capital markets, the improvement of settlement systems, and the review of the practices in trade and capital transactions.

June 2001: Report of the Study Group for the Promotion of the Internationalization of the Yen (The Study Group was set up in the International Bureau of Ministry of Finance)

It followed up on the recommendations made by the Foreign Exchange Council in April 1999 and explored further measures to promote the internationalization of the yen.

June 2002: Summing up of the Study Group for the Promotion of the Internationalization of the Yen

It reviewed the recent situation in trade and capital transactions denominated in yen and identified from the viewpoints of practitioners the problems for further improvement in these transactions.

January 2003: Summarization by the Chairman of the Study Group for the Promotion of the Internationalization of the Yen

The Chairman of the Study Group summarized the reviews by the group as follows:

Since the submission of the recommendations by the Foreign Exchange Council in 1999, many of them were put into implementation. They included the exemption for foreign corporations from withholding tax on the original issue discounts for TBs and FBs; exemption for nonresidents and foreign corporations from withholding tax on interest accrued from government bonds(JGBs) in the BOJ book-entry system, improvement of the government bond markets by introducing new types of bonds with diversified maturities such as 5-year and 30 year coupon-bearing bonds, and improvement of settlement systems by restructuring the Bank of Japan Financial Network System (BOJ-NET) to a Real-Time-Gross-Settlement (RTGS) system, extending its operating hours, and by unifying settlement systems for commercial papers, corporate bonds and government bonds to realize DVP system.

3-2-4. Views and arguments on why the internationalization of the yen has failed to make intended progress

The use of the yen gradually increased its share in trade transactions until 1980s, but in the 1990s, the share stopped rising, and in some cases decreased. There have been various arguments and explanations for the reasons behind the less-extensive use of the yen than expected.

First of all, the choice of invoice currency in international trade is usually affected by such factors as the market competitiveness (bargaining power), invoicing currencies in international commodity markets, and trade structure. In the case of Japan's trade, however, it is often cited that imports of the raw materials which are traditionally quoted in dollars in international markets account for a high percentage and Japanese parent companies tend to assume by themselves the foreign exchange risks in intra-firm trade with their overseas subsidiaries.

Even in the trade between Asian countries with which Japan has strong economic ties, the yen is not extensively used, especially in imports. This is largely accounted for by such backgrounds as that the yen is not convenient enough because the foreign exchange markets between the yen and Asian currencies remain underdeveloped and that the exchange rates between the yen and Asian currencies were as unstable as against the dollar because main Asian currencies were linked to the dollar.

Another background observed for the slow progress of the internationalization of the yen is the declining credibility for the yen reflecting the long stagnation of the Japanese economy in the 1990s and after. Furthermore, Japanese practices and institutional constraints in choosing the currency for international trade and capital transactions are also cited for the tepid demand for the

yen.

In addition, in the Asian regions with which Japan enjoys closer economic ties, presence of Japan is said to be not so outstanding as compared with that of other developed countries.

3-2-5. Conclusion

Making the yen fully convertible through the liberalization of foreign exchange and capital controls has been a prerequisite for the international use of the yen. It can be evaluated that the liberalization of the foreign exchange and capital controls has greatly contributed to the economic growth of Japan, even if it has not resulted in the successful internationalization of the yen.

It has contributed to the expansion of Japan's international transactions (i.e. current account transactions and capital transactions). It also contributed in providing the investors with means for hedging against various risks including foreign exchange risks. Although the ratio of yen-denominated overseas transactions is still not high, both residents and nonresidents enjoy the benefits of inexpensive means for risk hedging.

The liberalization of foreign exchange and capital transactions can increase the efficiency of economic and financial activities, but it also has the possibility to expand their volatility. It should be remembered that there were times when Japan was forced to strengthen the capital controls and regulations to deal with the rapid movements of capital flows as was seen in the 1970s when the breakup of the Breton Woods regime and oil crisis induced the massive capital flows to and from Japan. In promoting the liberalization, such policy measures would be necessary as to secure ample foreign exchange reserves, and reinforce economic and financial stability of the domestic economy. In order to secure the economic and financial stability, it would be necessary to temporarily strengthen the regulations when some shocks could undermine the stability.

In summary, Japanese experiences indicate the lessons that it is necessary to deregulate the foreign exchange and capital controls in tandem with the development of domestic economy and financial system, and that it should be prepared for the volatile inflows and outflows of capital movements by reintroducing regulations in case of emergency.

Table3-1: Developments toward Internationalization of the Yen—Chronology

Jun. 1960	Cabinet adopts “Broad Outline for the Liberalization Program of Foreign Trade and Foreign Exchange” where foreign exchange transactions on the current account should be liberalized in principle within two years and those on the capital account gradually with taking into account their impacts on the domestic economy
Jul. 1960	Use of Yen permitted for overseas settlements
Nov. 1960	Introduction of nonresidents’ free-yen account
Jan. 1961	Companies permitted to make short-term foreign borrowings on an individual screening basis
Jun. 1961	The first postwar issuance of foreign bonds by Japanese private companies in the US
Apr. 1964	Sony company issues ADR in NY (first postwar issuance of Japanese stocks abroad)
Jun. 1967	Japan accepts the obligations under the Article 8 of the IMF Agreements
Feb. 1968	Japan abolishes foreign exchange budgets
Mar. 1969	Major securities dealers permitted to open special securities accounts for nonresidents to invite smooth investments from abroad
Oct. 1969	First phase of capital liberalization implemented
Apr. 1970	<ul style="list-style-type: none"> • automatically permitting inward direct investments up to 50% for 33 industrial sectors (the type one) and 100% for 17 sectors (the type two) • hike of automatic authorization limit of foreign investment in Japanese stocks by 5% to 15% for limited sectors and to 20% for not limited sectors (for individual investors by 2% to 7%) with further hikes towards basically 100% in May 1973
Sep. 1970	Introduction of restriction on spot foreign exchange positions of authorized foreign exchange banks (so-called “yen conversion”)
Dec. 1970	Second phase of capital liberalization:
Aug. 1971	The number of industrial sectors to be included in the type one of inward direct investment was increased from 33 to 160 and in the type two from 17 to 44.
May 1972	Start of the liberalization of outward direct investments which was completed in June 1972 enabling the Japanese investors to make direct investment abroad on a basically free basis
May 1973	Start of the liberalization of outward portfolio investments which were formerly totally forbidden (Portfolio investment trusts were permitted to incorporate foreign securities in April 1970 and towards the middle of 1970s purchases of foreign securities were liberalized in steps to other institutional investors, then to investors in general)
Jun. 1975	The third phase of capital liberalization : The numbers in type one industries were increased to 447 (including banking and insurance) and in the type two to 77
Jun. 1977 and Jan. 1978	Start of yen denominated foreign bond issues by nonresidents (first by ADB)
Jun. 1975	The fourth phase of capital liberalization: The list of the type one industries was converted to a negative list where direct investment in 7 industries was to be screened individually. The number of the type two industries increased from 77 to 228
Jun. 1975	Concentration system of foreign currencies abolished
Jun. 1975	The fifth phase of capital liberalization: Inward direct investments were totally liberalized except for 5 sectors including agriculture-forestry-fishery, and retails.
Jun. 1975	Direct investment in retail sector liberalized and liberalization process of inward direct investment completed with only 4 restricted sectors remaining as exceptional
Jun. 1977 and Jan. 1978	Further liberalization of capital transactions and simplification of their registration procedures
Dec. 1979	Foreign Exchange and Foreign Trade Control Act (New Foreign Exchange Act) amended on a broad range (to be implemented in Dec. 1980) :
	(1) Capital transactions become basically free with foreign borrowings and portfolio investments permitted by prior notification

	<p>(2) In case of large movement of capital and volatile fluctuation of foreign exchange rates, the Minister of Finance can introduce authorization system of capital transactions (regulation for emergency restriction)</p> <p>(3) When and where a capital transaction notified may incur a bad influence on the Japanese financial markets, the Minister of Finance can order or recommend a change or a cancellation of the transaction (of foreign lending, foreign and domestic bond issuance and outward and inward direct investment)</p>
Nov. 1983	Establishment of US-Japan Yen Dollar Committee (to facilitate further liberalization of Japanese exchange rate system)
Apr. 1984	Abolition of real demand principle on which forward exchange transactions were permitted only when they were based on bona fide demands such as exports and imports
May 1984	Ministry of Finance publishes the report of US-Japan Yen Dollar Committee titled "Present Situation and the Future Developments for Financial Liberalization and Internationalization of the Yen"
Jun. 1984	Abolition of regulation on spot foreign exchange positions of authorized foreign exchange banks (so called "yen conversion")
Dec. 1984	Liberalization of short term lending in Euro-yen Foreign institutions allowed to become lead managers in Euro-yen bond issues
Apr. 1985	Abolition of withholding tax on interest from Euro-yen bonds issued by residents
Jul. 1985	Ministry of Finance issues "Action Program relating to Financial and Capital Markets" to promote financial liberalization
Sep. 1985	Plaza Accord (to correct foreign exchange rate misalignments among major countries)
Apr. 1986	Relaxation of standard requirements for Euro-yen bond issues by nonresidents (complete change to rating-basis system from individual screening system and bonds above A rating can be issued unconditionally)
May 1986	Amendment of Foreign Exchange Act (Offshore market introduced)
Feb. 1987	Louvre Accord (to stabilize the foreign exchange rates among major countries)
May 1987	Liberalization of transactions on own accounts basis of overseas financial futures (futures and future options)
Jul. 1987	Relaxation of standard requirements for Euro-yen bond issues by residents (rating system introduced)
Nov. 1987	Issues by nonresidents of Euro-yen commercial paper permitted
March 1988	Liberalization of transactions on own accounts basis of overseas financial futures (spot options)
Apr. 1989	Tokyo Exchange of Financial Futures established (Reorganized as Tokyo Financial Exchange Inc. in 2007)
May 1989	Lending to residents in Euro-yen liberalized for medium to long term loans
Jun. 1989	Liberalization of transactions (intermediation) of overseas financial futures (futures, future and spot options)
June 1989	Further relaxation of standard requirements for Euro-yen bond issues by nonresidents (can be issued regardless of the ratings of the bonds) and permission of issues of Euro-yen bonds with maturity of less than 4 years (formerly more than 5 years)
July 1989	Relaxation of overseas foreign currency deposits (no authorization needed for those by individuals of less than 5 million yen or its equivalent)
July 1990	Liberalization of overseas foreign currency deposits (no authorization needed for those in portfolio investment accounts of less than 30 million yen or its equivalent regardless of by corporate or individual)
Feb. 1991	Transaction of futures started between US dollar and Japanese yen in Tokyo Exchange of Financial Futures (TEFF)
Jun. 1991	Relaxation of standard requirements on bond issuance by Sovereigns to expand to BBB ratings and up

Jul. 1991	Transaction of interest rate options for Japanese yen started in TEFF
Jan. 1992	Authorization for contracts on inward direct investment and technology import changed from prior notification system to basically after-the-fact reporting system Relaxation of standard requirements for domestic bond issuance by public (sovereign) nonresidents to expand to BBB ratings Start of transaction of futures of 1 year interest rate for Japanese yen in TEFF
Apr. 1993	Abolition of administrative guidance (Three bureaus' agreement) on limitation of the acceptance by bank subsidiaries of overseas bonds issued by residents (with 5 year phasing out measures to prevent disorderly conditions) Abolition of guideline for Euro-yen bond issues by nonresidents
Jul. 1993	Relaxation of procedures for foreign bond issues by residents (to be based on the issuing program of corporate bonds) Permission of currency swaps provided to Japanese foreign straight bond issuers by the Designated Security Dealers at the acceptance by their overseas subsidiaries
Jan. 1994	Relaxation of standard requirements for foreign bonds issued by residents to expand to non guaranteed bond with BBB rating (with net assets of ¥20 billion) and Samurai bonds issued by nonresidents
Mar. 1994	Abolition of "recycling to Japan" restriction on Sovereign Euro-yen bonds Relaxation of foreign exchange regulation on participation by nonresidents in the auction of domestic IPO Ceilings on free admission of overseas deposits by residents raised to ¥100 million from ¥30 million
Apr. 1994	Ceilings on no required notification on outward and inward portfolio investment as well as outward direct investment raised to ¥100 million from ¥30 million Ceilings on no required notification on loans of money between residents and nonresidents raised to ¥100 million from ¥10 million
Jul. 1994	Ceilings on transactions to be subjected on netting accounts between head office and branches raised to ¥100 million from ¥10 million Relaxation of standard requirements for foreign bond issues by residents and domestic bond issues by nonresidents (removed the requirement for the issuer with net assets of ¥20 billion and above) Issuance of Euro-yen bonds by resident permitted for those with guarantee by parent company Reporting forms abolished or simplified for international financial transactions reflecting the fifth revision of balance of payments manual Transactions of FRA (Forward Rate Agreement) and FXA (Forward Exchange Agreement) permitted
Apr. 1995	Introduction of comprehensive license (notification) system to Euro-yen and domestic bond issues by nonresidents and foreign bond issues by residents Liberalization of overseas deposit accounts in foreign currency under the comprehensive licensing system under which corporations that satisfy certain criteria are to be permitted to open an account for making portfolio investment Range expanded for direct transaction of derivatives to include those traded on overseas Exchanges Currency swap transactions permitted between securities companies and domestic investors in order to fix in Yen the receipt amount of interest and redemption for the foreign assets that domestic investors purchase from securities companies Ceiling of automatic authorization raised on the amount of overseas remittance for contribution and donation (from ¥5 million to ¥10 million) Comprehensive licensing system introduced for netting settlement of overseas repo transactions
July 1995	Relaxation of regulations on Tokyo Offshore Market to simplify the confirmation procedure of nonresident Abolition of 50% rule for life and nonlife insurance companies on making overseas

Aug. 1995	loan in Yen and permission for them to make loans in foreign currencies Complete abolition of “recycling to Japan” regulation for Euro-yen bond issued by nonresidents
Sept. 1995	Relaxation of regulations to encourage authorized foreign exchange banks to make investment in foreign bonds by converting yen into foreign currencies
Oct. 1995	Special acceptance of application for opening overseas branches and representative offices of domestic banks Extension of maximum deposit maturity for Euro-yen CDs from 2 years to 5 years in line with the same extension for domestic CDs
Jan. 1996	Change from monthly to quarterly of reporting frequency on issues of foreign securities by authorized foreign exchange banks
Feb. 1996	Abolition of standard requirements for issuing foreign bonds by residents and domestic bonds by nonresidents Permission of transaction of Yen interest swap by securities companies with nonresident investors Introduction of package authorization for settlements in foreign currency among residents and other liberalizations
Apr. 1996	Two-step loans made by authorized foreign exchange banks designated as “no notification required” Simplification of reporting form on foreign exchange transactions by money changers Ceiling of the amount not requiring authorization raised for overseas foreign currency deposit and others from ¥100 million equivalent to ¥200 million equivalent Relaxation from 90 days to 40 days of restraint period for recycling to Japan of Euro-yen bonds issued by residents Ceiling amounts reviewed for foreign exchange position Abolition of requirements on authorized foreign exchange banks for reporting large amount transactions on individual customer basis Abolition of standard requirements for nonresidents issuing Euro-yen CP
Sept. 1996	Settlements of securities transaction permitted between overseas foreign currency deposits for portfolio investments (by residents) and overseas foreign currency deposits of designated securities companies Liberalization in principle of special settlement length system for trades in good, services and intermediary trades excluding exports that are subject to the OECD’s Agreement on Publicly Guaranteed Export Credit Guidelines Relaxation of regulations on credit transactions between designated securities companies and nonresidents investors
Jan. 1997	Relaxation of regulations on forward exchange contracts (for hedging and advance) made by designated securities companies with the investors Permission of currency swap transaction and over-the-counter transaction of currency options made by designated securities companies with resident investors Relaxation of regulation on currency swap transaction made by designated securities companies with bond issuers (to add nonresidents issuers) Consolidation and reduction of numbers of reporting forms on foreign exchange transactions for securities
Feb. 1997	Relaxation of regulation on Yen interest rate swap transaction made by designated securities companies with nonresident investors to include in the latter overseas group entities of the designated companies
Mar. 1997	Permission of multi-netting methods on open and current accounts, abolition of restrictions on sectors and booking amounts, and expansion of the range of counterparts permitted to make netting with Introduction of package notification system to debt guarantees for issuing and offering of securities by foreign entities Simplification of notification form on acquisition of foreign securities and contract of lending money which are related to overseas direct investment

May 1997	Enactment of partially amended Foreign Exchange and Foreign Trade Act (to be implemented in April 1998) to liberalize outward and inward capital transactions, completely liberalize the foreign exchange business, etc)
Apr. 1998 May 1998	Amended Foreign Exchange Act (New Foreign Exchange Act) put into force Finance Minister Matsunaga promises to promote the internationalization of the Yen at the APEC Finance Ministers Meeting
Jun. 1998	Nippon Keidanren proposes “Reforming the Short-term Financial Markets and Enhancing the International Use of the Yen”
Jul. 1998	Ministry of Finance establishes Subcouncil on Internationalization of the Yen under the Council on Foreign Exchange and Other Transactions
Nov. 1998	Subcouncil on Internationalization of the Yen releases “Interim Report on Internationalization of the Yen”
Dec. 1998	Ministry of Finance releases “Measures to Facilitate the Internationalization of the Yen” which include public offering and competitive price auction of Finance Bills (FBs), Tax reforms, and diversification of maturities of governments bonds by introducing 30 year JGBs and one-year TBs
Apr. 1999	Council on Foreign Exchange and Other Transactions releases recommendations titled “Internationalization of the Yen for the 21 st Century” that include improving financial and capital market environments and reviewing the yen’s role in Asian countries’ exchange system
Sep. 1999	Study Group for the Promotion of the Internationalization of the Yen formed to follow-up the above recommendations
Jun. 2000	Study Group for the Promotion of the Internationalization of the Yen releases “Interim Summarization” of their discussion

3-3. Internationalization of the Chinese renminbi

Recently the interest has been growing on the internationalization of the RMB (Chinese Renminbi), and it will be useful to sort out the arguments on this topic. The internationalization of the RMB can be defined as the greater use of the RMB in international transactions, in other words, the expanded use of the RMB in China’s border trades or its overseas transactions.

(1) Recent developments of the internationalization of the RMB

The RMB is already widely used in the border trades with the neighboring countries such as Vietnam, Laos, Myanmar, Central Asia, Russia, etc. and it was decided at the Standing Committee of the State Council held in December 2008 that the RMB should be used on a trial basis in the trade i) between Quang Dong Province and Hong Kong/Macau, ii) between Guangxi and Yunnan Provinces and ASEAN countries.

Between 2008 and 2009, China concluded Currency Swap Agreements with Republic of Korea, Hong Kong, Malaysia, Belarus, Indonesia and Argentine to provide liquidity for trade and direct investment. These agreements are separate from and additional to the Swap Agreements under the Chiang Mai Initiative concluded between ASEAN plus Three (Japan, China, and Korea) to prevent the recurrence of the currency crisis in the region.

Meanwhile, Hong Kong started to use the RMB several years ago, with permitting in February 2004 the local banks to engage in the RMB business for individuals and permitting in November 2007 the corporations to hold RMB denominated deposit accounts in local banks, although on limited conditions. In 2005 the foreign entities were permitted to issue RMB-denominated bonds in China. These bonds are called RMB-denominated Foreign Bonds (generally called “Panda bonds”).

(2) Challenges for the Internationalization of the RMB

The RMB is currently not freely usable currency for non-residents. Many people think this situation will be a big obstacle to the process of the internationalization of the RMB.

Looking into the foreign exchange transactions in China, only domestically authorized participants can make transactions in the CFETS (China Foreign Exchange Trade System), but nonresidents’ free access to the RMB foreign exchange markets is strictly restricted. They are required to provide evidence of the underlying transactions for the foreign exchange transactions.

As for the underlying transactions for foreign exchange, current transactions such as trade in goods and services have been liberalized. However, overseas capital account transactions are still restricted. While direct investment in China from abroad can be made with weaker restrictions, other capital transactions are strictly restricted and basically require permissions. Portfolio investment, for instance, was permitted within a certain limitation in April 2006 when the QDII (Qualified Domestic Institutional Investors) system was introduced for outward investment and at the end of 2002 when the QFII (Qualified Foreign Institutional Investors) system was introduced for inward investment. Under these systems, qualified institutional investors and financial institutions have been allowed to engage in the transactions, although restrictions still remain. Outward lending and foreign borrowings basically need authorization.

(3) Outlook

China already has a significant presence in the world economy and trade. This explains why the RMB is widely used in the trade transactions with the developing countries with which China has a border. Even if there remain some problems in its convenience as described above, there will be a high possibility that the use of the RMB in the current account transactions including trade will proceed mainly in Asia because of the expanded presence of China

China’s share of world exports of goods and services accounted for 8.4% in 2008. Japan accounted for 4.5%, as compared with the US’s 9.3%, and Germany’s 8.7% (according to the databank of the World Bank and the IMF). Given the high economic growth rate expected for China in the coming years, China has a potential to further increase its presence in the world economy and trade.

However, the internationalization of the RMB will face a constraint since its foreign exchange market and financial and capital markets are still undeveloped and immature in China, making it difficult for the nonresidents to make transactions freely. The important prerequisites for China to promote the internationalization of the RMB are that the nonresidents can freely hold the RMB denominated deposits in the markets where the nonresidents can make free transactions and that they can freely exchange the RMB with foreign currencies. However, neither of these two prerequisites is met in the present China.

For this reason, the nonresidents cannot make an effective hedging on the foreign exchange risk of the RMB, which is presently hampering the internationalization of the RMB. If the nonresidents are allowed to do these transactions freely, the RMB denominated transactions will expand and “the economy of the scale” thereof will lower the transaction costs in foreign exchanges and hedging risks, which will further encourage the expansion of the RMB-denominated transactions.

For several reasons, however, it will take some time before the nonresidents will be able to freely make transactions in the RMB.

Firstly, China is likely to continue to take a cautious stance on the liberalization of foreign exchange and capital controls taking the lessons from the past experiences of the debt and currency crises in the other developing countries. As discussed above, China learned a lesson from the debt crisis of 1980s in Latin America and maintained the policy to strictly control capital flows except foreign direct investment. In fact, this policy helped to enable China to avoid the contagion from the Asian currency crisis. Furthermore, it is obvious that China could escape the direct influence of the recent global financial crisis because China had restricted the inward and outward capital flows.

It is generally considered that China can well manage the effects of the liberalization of capital controls because it has accumulated a huge volume of foreign exchange reserves and it can counter the shocks from overseas by intervening to support the RMB. However, due to this merit of maintaining the foreign exchange and capital controls and restrictions as depicted above, many people expect the liberalization would gradually proceed.

The second reason is related to the foreign exchange rate system itself. According to the classification of the IMF, Chinese exchange system is classified in a kind of “de facto crawling peg system”, the one very close to the fixed rate system. If China is going to continue to stick to this system in the years to come, it has to maintain the foreign exchange controls and capital restrictions. For if China tries to manage the exchange rate of the RMB to rise gradually even in the environment that many market players expect a possible rise of the RMB, foreign exchange controls and capital regulations are indispensable in controlling the rising pace of the RMB value.

The third reason is related to the problem it has with the domestic financial system. In

order to deregulate the foreign exchange and capital controls, it has to establish a sound and transparent financial system. Although there has been a significant improvement in the domestic financial system, there still remain issues and it will take time for them to be solved.

3-4. The Experience of the euro as a regional vehicle currency

How will the introduction of a single currency in the region affect the choice of invoicing currency of these countries? Kamps (2006), which investigates the determinants of currency invoicing in international trade and the role of the euro as vehicle currency, concludes that the introduction of the common currency in the euro area increased the invoicing in euro even though the role of the euro as vehicle currency seemed to be limited in other region compared to the US dollar. As the ECB has reviewed the international role of the euro in its annual reviews, the euro has steadily increased its share in the settlement and invoicing of trade especially in euro area and non-euro area EU countries.¹⁵

Table 3-2 shows the currency breakdown of exports and imports of euro area countries. In all countries, the euro's share in merchandise export increased from 2001 (2002) to 2007. It ranged from 39.2% (Greece) to 65.2% (Germany, Spain) in 2007, after ranging between 23.5% (Greece) and 52.7% (Italy) in 2001. The largest change was from 40.3% (2001) to 61.4% (2007) in Portugal, and the smallest was from 50.8% (2001) to 51.3% (2007) in France. On an average, the euro's share increased by 11.3%. In all euro area countries except for Greece, the euro invoicing share in merchandise export was above 50 % in 2007.¹⁶ At the same period, the US dollar's share in merchandise export decreased by 6.7 % on an average. The largest change was from 67.7% (2001) to 57.2% (2007) in Greece, and the smallest was from 32.5% (2002) to 31.9% (2007) in Belgium.

The euro's share in merchandise import also increased by 5.0 % on an average. However, the size of increase was relatively smaller than the case of export. It ranged from 34.9% (Greece) to 58.3% (Belgium) in 2007, after ranging between 29.3% (Greece) and 53.7% (Belgium) in 2001. The changes of US dollar's share were mixed and there were no big changes on an average.

Interestingly, the changes of invoicing currency share differ from country to country. In Germany, Spain, Greece, and Luxembourg, the euro's share increased by more than 10.0 % in export and by more than 5.0 % in import. In Italy and Portugal, the euro's share in export increased by more than 10.0 %, but its increase in import was below 5.0 %. Contrary to these countries, there were no

¹⁵ For ECB, it seems difficult to obtain the data of invoicing and settlement currencies in international trade. In fact, the data in 2007 published in the annual review of "The international role of the euro" covered only one third of global merchandise trade transactions.

¹⁶ One possible reason why the euro's invoicing share in Greece is relatively low compared with other euro area countries is that Greece joined in the euro area in 2001, two years later than other 11 countries.

(2007) in Lithuania, and the smallest was from 32.8% (2001) to 34.3% (2007) in Denmark. On an average, the euro's share increased by 12.0%. In the same period, the US dollar's share in merchandise export decreased in most countries. The largest change was from 58.8% (2001) to 36.0% (2007) in Lithuania. On an average, the US dollar's share decreased by 8.3%.

The euro's share in merchandise import also increased in most countries. It ranged from 32.7% (Denmark) to 84.0% (Slovenia) in 2007, after ranging between 36.3% (Denmark) and 79.0% (Slovenia) in 2001. On an average, the euro's share increased by 8.0%. The largest increase was from 82.4% (2001) to 58.0% (2007) in Slovenia, and the smallest is from 66.6% (2001) to 68.0% (2007) in Czech. On an average, the euro's share increased by 8.0%. In the same period, the US dollar's share in merchandise export has decreased in most countries. The largest change was from 52.9% (2001) to 37.6% (2007) in Lithuania. On an average, the US dollar's share has decreased by 6.2%.

It is interesting to note that the share of local currency invoicing also increased in some countries. For example, the local currency invoicing expanded in both export and import in Denmark and Poland. These findings indicate that the role of the US dollar as a vehicle currency is becoming less important in EU countries.

As the European Central Bank pointed out in its review of the international role of the euro, the euro's rise started by building up its position on its domestic markets and by making its mark on its immediate neighbors as a transaction currency. Before introduction of the euro, there was the European Currency Unit (ECU). The ECU, which was a common currency basket of the EU countries, was the official accounting unit of the EEC and was also used in transactions of the European Investment Bank. Although the financial use of the ECU by the private sectors was expanding rapidly, it failed to be used as a transaction currency. Contrary to the ECU, the euro has steadily increased its share in the settlement and invoicing of trade of euro area and non-euro area EU countries with the rest of the world. These experiences suggest us that creating a common currency in Asia will be a useful method to free Asian countries from over-dependence on the US dollar, but that creating a common currency basket as an indicator alone is not enough.

Table 3-3. Currency Breakdown of Exports and Imports of Goods
New euro area countries & Non-euro Area EU countries (%)

New euro area & Non-euro area EU countries	Export			Import			
	Euro	USD	Local currency	Euro	USD	Local currency	
Bulgaria	2001	48.1	49.0	...	55.5	41.8	...
	2006	57.7	40.2	...	58.9	39.0	...
Czech	2001	68.7	14.1	10.3	66.6	19.7	7.7
	2007	72.0	15.9	...	68.0	22.6	...
Denmark	2001	32.8	25.3	22.3	36.3	23.1	27.9
	2007	34.3	19.3	28.0	32.7	18.1	38.9
Estonia	2001	53.8	14.0	21.2	53.9	25.7	5.2
	2007	57.8	17.7	18.6	58.5	19.4	17.0
Hungary	2001	79.4	15.7	...	70.5	21.7	...
	2004	84.8	9.6	...	70.8	18.8	...
Latvia	2001	34.1	41.4	...	44.5	37.3	...
	2007	59.5	28.9	3.5	67.2	22.1	5.5
Lithuania	2001	27.8	58.8	8.0	38.3	52.9	1.2
	2007	56.5	36.0	5.0	55.4	37.6	0.6
Poland	2001	57.2	33.8	4.1	57.7	32.9	4.6
	2007	69.8	17.2	9.0	59.1	26.9	11.2
Romania	2001	55.7	39.5	...	60.6	35.1	...
	2007	67.7	29.5	...	71.5	26.7	...
Slovakia	2001	71.0	15.0	5.9	58.0	24.0	5.1
	2007	95.8	3.1	0.4	82.4	15.9	0.4
Slovenia	2001	85.0	10.3	...	79.0	15.7	...
	2007	89.2	8.0	...	84.0	14.6	...
Average change from 2001 to 2007		12.0	▲ 8.3		8.0	▲ 6.2	

Source: European Central Bank, "The Review of the International Role of the Euro" July 2009.

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Chapter 4 : Exploring the possibility to deregulate the foreign exchange restrictions and capital controls

4-1. Introduction

The invoicing and settlement currencies in trade are determined by exporters and importers depending on various factors. The mechanisms how they determine their invoicing and settlement currencies are considered in Chapter I and Chapter II.

According to Genberg (2009), internationalization of a currency needs some pre-requisites as follows,

- (1) no restrictions on cross-border transfers of funds,
- (2) no restrictions on third party use of the currency in contracts and settlements of trade in goods or assets,
- (3) no restrictions on transactions of assets denominated in the currency in private or official portfolios,
- (4) existence of a deep and dynamic domestic financial market,
- (5) a well-respected legal framework for contract enforcement,
- (6) stable and predictable macro and micro economic policies, etc.

In this chapter we will review and consider the foreign exchange restrictions and capital controls of the major economies in East Asia, which might constitute obstacles for exporters and importers to use their currencies to settle the trade payment. And we will try to find which currency is ready to be used internationally.

4-2. Foreign exchange regulations and capital controls of economies in East Asia

When exporters and importers want to use East Asian currencies in their trade settlement, the pre-requisite conditions would be; (1) the cross border transactions of the currency are possible both on de jure and de facto basis in the market, (2) the exchange rate risks can be hedged, and (3) the hedging cost is low enough. If a country has any restrictions shown below for the transactions by residents or nonresidents, they should be the obstacles to satisfy the above prerequisite conditions.

- (1) on cross border payment and receipt of the local currency
- (2) on opening nonresident account denominated in local currency
- (3) on exchange of local currency to foreign currency in spot and forward market both in onshore and offshore markets
- (4) on fund raising and operation in local currency for trade finance

Furthermore, if there are any restrictions on exchange transactions or capital transactions

either in the domestic market or cross border transactions, they will obstruct the expansion of the exchange market and as a result they will fail to sufficiently lower the transaction cost. From such a viewpoint, we review the foreign exchange regulations and capital controls in major economies (China, Hong Kong, Indonesia, Korea, Malaysia, Philippines, Singapore, Thailand and Vietnam) in East Asia by available data and information¹⁷. We found the following points. As these 9 economies have accepted the “Article 8” of International Monetary Funds Agreement, they do not have any regulations which restrict the current transactions except for national security purposes. However they have some restrictions on foreign exchange and capital accounts transactions, as follows.

- (1) Some economies prohibit cross border trade settlement in their own currency. Only 3 currencies that are in our research object, i.e., Hong Kong Dollar, Singapore Dollar¹⁸, and Thai Baht are deliverable in cross border settlement.
- (2) Many economies have some restrictions on foreign exchange or capital transfer, although the level of the strength of the binding differs by the economies.
- (3) Some economies uphold the real demand principle for foreign exchange hedging in the domestic market and require documentary evidence of underlying transactions.
- (4) Some economies control the foreign exchange positions of the authorized banks and financial institutions.

According to the IMF (2007) the indices of capital controls in emerging market regions suggest that controls on capital inflows have been relaxed since the late 1990s after strengthened in the latter half of 1990s, although in the aggregate the changes have been relatively slow. The emerging Asian economies have remained more restrictive on capital inflows than Latin America and Eastern Europe and CIS economies (figure 4-1). For the capital outflows almost all of the emerging market regions strengthened the controls in the latter half of 1990s. With the backdrop of the Asian Currency Crisis, emerging Asian economies kept strengthening the controls even though Eastern Europe and CIS economies began to relax them since late 1990s (figure 4-2). As a result, the indices of capital controls of the emerging Asia kept to be higher than those of Eastern Europe and CIS or Latin America (figures 4-1, 4-2, table 4-1).

¹⁷ Foreign exchange regulations and capital controls of each country are listed in the appendix at the end of this chapter.

¹⁸ Singapore adopted the policy of non-internationalization of its domestic currency in the early 1980s. Restricting international use of domestic currency by that policy, the Authority protected the S\$ from speculative attacks and facilitated the effective conduct of monetary policy. However, with the background of economic globalization of Singapore, the restrictions became overly binding. The restrictions on the international use of S\$ were progressively relaxed after the Asian crisis. Please refer to the appendix for the evolution of the non-internationalization policy of Singapore Dollar.

Figure 4-1: Index of Controls on Capital Inflows

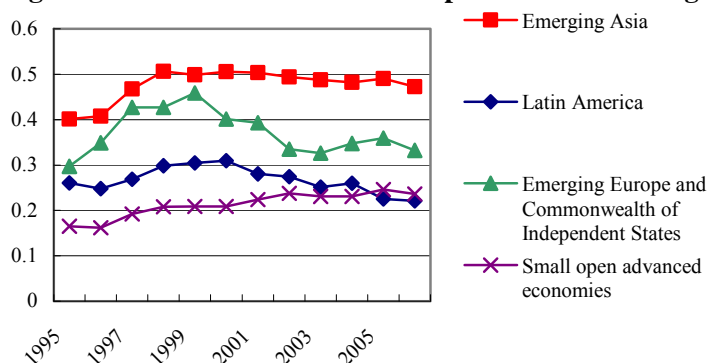
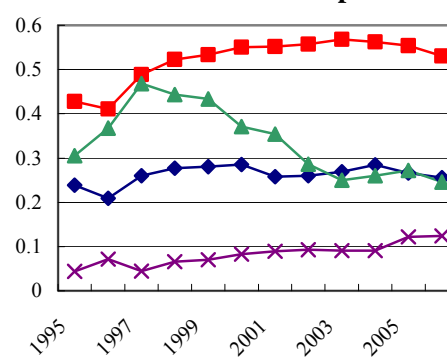


Figure 4-2: Index of Controls on Capital Outflows



Note: Index based on IMF's *Annual Report on Exchange Arrangements and Exchange Restrictions*.
Source: IMF, "World Economic Outlook", Oct.2007

Table 4-1: Regulatory Frameworks for Current and Capital Transactions in major Countries in East Asia (as of December 2007)

	China	Hong Kong	Indonesia	Korea	Malaysia	Philippines	Singapore	Thailand	Vietnam	Japan
Arrangements for payments and receipts										
Bilateral payments arrangements					○	○			○	
Payment arrears										
Controls on payments for invisible transactions and current transfers	○					○		○	○	
Proceeds from exports and/or invisible transactions										
Repatriation requirements	○			○	○			○	○	
Surrender requirements										
Capital transactions										
Controls on:										
Capital market securities	○		○	○	○	○	○	○	○	○
Money market instruments	○		○	○	○	○		○	○	○
Collective investment	○		○	○	○	○		○	○	○
Derivatives and other instruments	○	○	○		○	○		○	○	○
Commercial credits	○		○		○	○			○	
Financial credits	○		○		○	○	○	○	○	○
Guarantees, sureties and financial backup facilities	○		○		○	○		○	○	
Direct investment	○		○	○	○	○		○	○	○
Liquidation of direct	○								--	
Real estate transactions	○		○	○	○	○	○	○	○	○
Personal capital transactions	○				○	○		○	○	
Provisions specific to:										
Commercial banks and other credit institutions	○	○	○	○	○	○	○	○	○	
Institutional investors	○	○	○	○	--	○	○	○	○	○

○ Indicates that the specified practice is a feature of the exchange system

-- Indicates that data were not available at time of publication

Source: IMF, "Annual Report on Exchange Arrangements and Exchange Restrictions 2008", Sept.2008

With these restrictions stated above, Tsuyuguchi (2008) found that the onshore and offshore markets were segmented and the transaction cost remained relatively high in East Asia. And

the evaluation of the market liquidity by Deutsche Bank shows that even though spot market liquidity is “good” in almost all of these markets, the liquidity in forward markets is not so good but “fair” or “poor”, especially in longer term transactions (Table 4-2)

From our interviews to Japanese banks, we also found that not only the foreign exchange restrictions but also foreign investment laws which restrict the activities of foreign companies could be hurdles for their client-companies in their intra company finance either of domestic or cross-border transactions.

With these facts stated above, we came to the conclusion that only few currencies are ready to be used for international trade settlement.

Table 4-2 : Overview of restrictions on foreign exchange transactions and market liquidity

		Deliverable transactions between:				Non-deliverable transactions between onshore dealers and offshore counterparties ○ : permitted × : prohibited	Liquidity 5		
		Onshore dealers and onshore counterparties ○ : no restriction	Onshore dealers and offshore counterparties ○ : no restriction × : prohibited	Offshore dealers and offshore counterparties ○ : permitted × : prohibited			Onshore transactions		Offshore transactions
				Spot	Forwards/swaps		Spot	Forwards/swaps	
Deliverable currency	Hong Kong Dollar	○	○	○	○	-	Good	Good	Good
	Singapore Dollar	○	○1	○	○	-	Good	Good	-
	Thai Baht	Underlying transaction required	Underlying transaction required	○	○	Onshore banks are prohibited for NDF transactions with nonresidents	Good	Good (1-12months) Fair (above 12months)	Good
Non-deliverable currency	Chinese Renminbi	Underlying transaction required	×	×	×	×	Good	Poor	NDF: Good
	Indonesian Rupiah	Free	Underlying transaction required	×2	×	×	Fair	Good (1-6months) Fair (above 6months)	NDF: Moderate
	Korean Won	Free (supporting documents required)	Spot purchases and sales are permitted for current account transactions, through free won account 3	×	×	○	Good	Good	NDF: Good
	Malaysian Ringgit	Underlying transaction required	Documents required	×4	×	×	Good	Good normally (Poor recently)	NDF: Average
	Philippine Peso	To sell PHP, underlying transaction required	Spot purchases are permitted for current account transactions	△Purchases are permitted	×	△Permitted with prior approval	Good	Good (overnight-6months) Fair (above 6months)	NDF: Poor

Notes:

1. Aggregate credit facilities exceeding S\$5 million to non-resident financial institutions for use outside Singapore are to be swapped out or converted to foreign currency upon draw-down.
2. Non-bank non-residents may buy Rupiah but must remit Rupiah to onshore immediately and cannot hold Rupiah outside the country.
3. Non-residents may access the onshore market through special domestic currency account for security investment provided that foreign exchange transactions are linked to an investment in domestic securities.
4. Non-bank non-residents may buy Ringgit but must remit Ringgit to onshore immediately and cannot hold Ringgit outside the country.
5. Liquidity: The evaluation of the market depends on Deutsche Bank in January 2009.

Sources: BIS WPNo.252 "The evolution of trading activity in Asian foreign exchange markets", Deutsche Bank, The Bank of Tokyo-Mitsubishi UFJ

Appendix 4-2. Foreign exchange restrictions and capital controls of selected East Asian economies

China

Exchange arrangement	Crawling peg with reference to an undisclosed basket of currencies
Exchange control	Only licensed onshore counterparties are allowed access to onshore foreign exchange market. Onshore corporate and onshore banks are not allowed access to offshore CNY products (e.g. Non-deliverable forward) . Foreign exchange market transactions are transactions with CFETS(China Foreign Exchange Trading System) and the over the counter transactions with banks licensed as market makers.
Domestic currency transactions	
resident accounts	Domestic and foreign-funded enterprises may open foreign exchange current accounts held domestically. Domestic institutions may retain foreign exchange receipts from current account transactions, or sell them to banks against domestic currency. When making foreign payments, institutions and individuals must present effective evidence and commercial documents to the banks to convert domestic currency into foreign currency.
nonresident accounts	Foreign exchange accounts Foreign investors related to direct investment and QFIIs may establish foreign accounts with approval. Domestic Currency Accounts QFIIs and international development agencies issuing renminbi bonds in China must receive permission to open accounts.
Export & Import transactions	Receipts and payments in foreign exchange for current account transactions shall have bona fide and legitimate transaction backgrounds. Financial institutions duly authorized for foreign exchange purchase and sale operations shall exercise due diligence in checking the authenticity of transaction documents and their consistency with the receipts and payments in foreign exchange in accordance with the regulations.

The summary of capital controls

		Inflows	Outflows
Money market	Non-residents	No permission	No permission
	Residents	Prior approval by the PBC and SAFE is required	No permission for residents, except authorized entities
Stock market	Non-residents	B shares and QFII	Sell B shares, repatriate QFII
	Residents	Sell H (or N or S) share abroad, repatriate of QDII	QDII
Bonds and other debts	Non-residents	QFII	No permission, except for some international finance entity, repatriate QFII
	Residents	Prior approval by the PBC and the SAFE is required. Bonds issued abroad must be incorporated into the State external debt plan.	No permission for residents, except authorized entities
Derivatives and other	Non-residents	No permission	No permission
		Residents Operations in such instruments by financial institutions are subject to prior review of qualifications and to limits on open foreign exchange position.	Operations in such instruments by financial institutions are subject to prior review of qualifications and to limits on open foreign exchange position.

(Source) Yu, Yongding (2008), "Managing Capital Flows: The Case of the People's Republic of China," ADB Institute Discussion Paper No. 96, March 2008

Liquidity	
spot transaction	Good
forward transaction	Poor

Sources: IMF "Annual report on Exchange Arrangements and Exchange Restrictions 2008",
The Bank of Tokyo-Mitsubishi, Deutsche Bank

Hong Kong

Exchange arrangement	Currency board system in Hong Kong, require the monetary base to be backed by the reserve currency (U.S. dollar) around an exchange rate of HK\$7.80 per US\$1.	
Exchange control	The forward exchange markets operate on private sector initiatives, and the government has no official role	
Domestic currency transactions		
	resident accounts	No restrictions
	nonresident accounts	No restrictions
Export & Import transactions	No restrictions	
Invisible transactions and current transfers	No restrictions	
Capital transactions		
	No restrictions	
Liquidity		
	spot transaction	Good
	forward transaction	Good

Sources: IMF "Annual report on Exchange Arrangements and Exchange Restrictions 2008",
The Bank of Tokyo-Mitsubishi UFJ, Deutsche Bank

Indonesia

BI:Bank Indonesia

Exchange arrangement	The de facto exchange rate arrangement is classified managed floating with no predetermined path for the exchange rate
Exchange control	No restrictions for general current transactions. But some exchange measures for security reasons.
	The BI regulate commercial offshore borrowing. Banks and nonbank corporate entities are required to report all offshore commercial borrowing and provide for risk management. Individuals are required to report commercial offshore borrowing equivalent to \$200000 or more. Purchase of foreign currency equivalent US\$100000 or more is required the underlying documents.
Domestic currency transactions	
banknotes	Travelers are free to export and import Indonesian notes and coins less than Rp100 million a person. To export the amounts in excess of this limit, approval of the BI is required and must be submitted to customs. To import the amounts in excess of this limit, a declaration must be submitted to customs.
resident accounts	Domestic currency accounts held abroad are prohibited. Domestic currency accounts convertible into foreign currency are permitted.
nonresident accounts	Domestic currency accounts are permitted. Domestic currency accounts convertible into foreign currency are permitted.
Export & Import transaction	No requirement for repatriation, financing.
Invisible transactions and current transfers	No controls.
Forward exchange market	If there is no underlying local investment activity, forward contracts against rupiah offered by domestic banks to nonresidents are limited to \$1 million a customer.
Capital transactions	
resident to nonresident capital transactions	Onshore banks are prohibited from conducting the following transactions with nonresidents:(1)lending in rupiah or foreign currency; (2)placing funds in rupiah; (3)purchase of rupiah-denominated securities issued by nonresidents, except securities related to export or import activities; (4)interoffice transactions in rupiah and interoffice accounts in foreign currency for provision of credit outside Indonesia; (5)equity participations in rupiah; (6)rupiah transfers to an account held by non residents, except for economic activities in Indonesia or between accounts held by the same nonresidents.
commercial credits by residents to nonresidents	Resident banks are prohibited from granting credit to nonresidents.
commercial credits to residents from nonresidents	Resident entities may borrow from nonresidents subject to compliance with the applicable regulations and the submission of periodic reports to he BI. Nonbank corporate entities intending to borrow are required to implement risk management procedures; long-term foreign borrowing must be rated by a credit rating agency, a foreign borrowing plan for one year, and a risk management analysis.
Liquidity	
spot transaction	Fair
forward transaction	Good (1-6 months), Fair (above 6months)

Sources: Bank Indonesia, IMF "Annual report on Exchange Arrangements and Exchange Restrictions 2008", The Bank of Tokyo-Mitsubishi UFJ, Deutsche Bank

Korea

MOSF:Ministry of Strategy and Finance, BOK: Bank of Korea

Legal basis	Foreign Exchange Transactions Act
Exchange arrangement	Independently floating
Exchange control	No restrictions for general current transactions. But some exchange measures for security reasons. All settlements with other countries may be made in any convertible currency except won. Nonresidents may carry out current transactions denominated in won, provided remittances are made in foreign currencies. Nonresidents may effect won-denominated current account transactions only through nonresident free won account.
Domestic currency transactions	
banknotes	Export and import of domestic banknotes in excess of US\$10000 by residents and nonresidents must be declared to customs.
resident accounts	Domestic currency accounts held abroad are permitted
nonresident accounts	Domestic Currency Accounts: Funds may be freely deposited to and withdrawn from the accounts. Notification to the BOK is required for overseas remittance of the withdrawn funds. Accrued interest from the accounts may be remitted abroad without notice. Free Won Accounts: Nonresidents may open settlement accounts in won for current transactions as well as for reinsurance contacts. Special domestic currency accounts for securities investment: Nonresidents may open settlement accounts in won for investment in domestic securities.
Export & Import transaction	Residents are subject only to a reporting requirement on external debt of \$0.5 million or more that is not collected within one and a half years of receipt. These fund may be held abroad and used for overseas transactions in accordance with the regulations on foreign exchange transactions.
Invisible transactions and current transfers	Proceeds from invisible transactions exceeding \$500000 must be repatriated within one and a half years of receipt. These fund may be held abroad and used for overseas transactions in accordance with the regulations on foreign exchange transactions.
Forward exchange market	Foreign exchange banks may conduct forward transactions, futures transactions, swaps, and options between foreign currencies, as well as between the won and foreign currencies.
Capital transactions	
Won-denominated loans to Nonresidents	Banks may freely provide loans up to the amount of W1billion. Institutional investors may provide loans up to the amount of W 1billion upon notification to the BOK. In other cases, permission by the BOK is required for won-denominated loans to Nonresidents.
Won-denominated borrowing from Nonresidents	Won-denominated borrowings from nonresidents require notification to the MOSF. Permission by the MOSF is required for short-term borrowing.
Won as means of settlement	Current transactions may be settled through nonresident free won accounts under the name of the person concerned for a foreign correspondent bank.
Issue of Won-denominated Securities	Issue of won-denominated bonds requires notification to the MOSF. For bond issues with maturity of less than one year, permission by the MOSF is required.
Liquidity	
spot transaction	Good
forward transaction	Good

Sources: Bank of Korea, IMF "Annual report on Exchange Arrangements and Exchange Restrictions 2008", The Bank of Tokyo-Mitsubishi UFJ, Deutsche Bank

Malaysia

COFE:controller of foreign exchange
IIB:International Islamic Bank

Legal basis	Exchange Control Notice of Malaysia.
Exchange arrangement	managed floating
Exchange control	
Domestic currency transactions	
	Cross-border payment in domestic currency is not allowed
	Prior approval of the COFE is required for payment in RM between a resident and a non-resident for <u>foreign currency capital and money market instruments</u> .
banknotes	The limit on exports of domestic currency by resident and non-resident travelers is RM 1000 a person. The exportation of domestic currency exceeding this amount requires approval by the COFE.
Resident accounts abroad	Residents are not allowed to have RM account overseas.
Non-resident ringgit accounts (external accounts)	Sources of funds in nonresident ringgit accounts may include (1)sales of foreign currency; (2)sales of ringgit assets in Malaysia; (3)income from salaries, wages, rentals, commissions, interest, profits, and dividends; (4)proceeds from permitted ringgit loans extended by residents; (5)proceeds from repayment of permitted ringgit loans, (6)deposit of ringgit in cash of up to RM10000 a day; (7)transfers of up to RM5000 a transaction from an account through ATMs, cards, internet banking, and ringgit checks;(8) transfers of any amount from another external account held by the same entity.
	Funds in external accounts may be used for (1)payments for purchases of foreign currency and ringgit assets in Malaysia; (2)payments for administrative and statutory expenses incurred in Malaysia, (3)payments for goods and services for personal use in Malaysia; (4)granting of loans to staff in Malaysia;(5)payments of nonfinancial guarantees to residents; (6)repayments of permitted ringgit loans; and (7)ringgit cash withdrawal.
	COFE approval is required for transfers of funds between accounts of different account holders and for use of funds other than for permitted purposes.
	There are no restrictions on the operation of external accounts of nonresidents working in Malaysia, embassies, consulates, central banks, international organizations in Malaysia.
Export & Import transactions	Proceeds from exports must be received and repatriated no later than six months from the date of export. Export proceeds must be received in foreign currency (except the currency of Israel).
	Resident companies with export earnings are free to pay other resident companies in foreign currency for settlement of goods and services.
	Payments for imports may be made freely in foreign currency. Residents may obtain trade credits extended by the supplier for all types of goods and services. Foreign currency trade financing facilities obtained from nonresidents other than the supplier are limited to a maximum of RM 5million in aggregate for each corporate group.
Invisible transactions and current transfers	Payments for invisibles and current transfers may be made without restriction. For any payment from a resident to a nonresident in excess of RM200,000 supporting documents must be submitted to the remitting bank for statistical purposes.
forward transactions	Residents are free to enter into forward exchange contracts with licensed onshore banks for the purpose of hedging for payments or receipts for current account transactions. Contracts may be based on a firm commitment or an anticipatory basis. For forward contracts on an anticipatory basis, the total outstanding value of the contracts should not exceed the total amount paid or received in the proceeding 12months.
	Nonresidents may enter into forward contracts with licensed onshore banks to hedge (1)committed payments or receipt for current account transactions, which may be settled in ringgit with residents, and (2)committed inflow or outflow of investment in ringgit assets.

Malaysia (continued)

Capital transactions	
Investment abroad by residents	Resident companies and individuals without domestic ringgit borrowing are free to invest in foreign currency assets. Residents with domestic ringgit borrowing are allowed to invest as follows: Individuals: (1)no limit if funded by own foreign currency funds retained onshore or offshore; (2)up to full amount of approved foreign currency borrowing, (3)up to RM1million in aggregate per year if funded from conversion of ringgit. Companies: (1)no limit if funded by own foreign currency funds retained onshore or offshore; (2)no limit if funded from proceeds of listing through IPO on the Main Board of Bursa Malaysia, or foreign stock exchanges; (3)up to RM50 million equivalent in aggregate and on corporate group basis per year if funded from conversion of ringgit; (4)up to the full amount on permitted foreign currency borrowing.
Resident borrowing in foreign currency	Resident individuals are free to borrow in foreign currency up to the equivalent of RM10 million in aggregate from: (1)licensed onshore banks; (2) licensed IIBs; and (3)nonresidents. Resident companies are free to borrow any amount in foreign currency from:(1)nonresident nonbank parent companies; (2)other resident companies within the same corporate group in Malaysia; (3)licensed offshore banks; (4)licensed IIBs. Resident companies are free to borrow in foreign currency up to the equivalent of RM100 million in aggregate on a corporate group basis: (1)from other nonresidents; (2)through the issuance of foreign currency denominated bonds onshore and offshore.
Inward investment	Nonresidents are free to purchase any ringgit assets. Ringgit for settlement of the investment can be sourced from: (1)nonresident's own External accounts; (2)sale of foreign currency with licensed onshore banks or overseas branches appointed by licensed onshore banks; (3)onshore borrowing
Lending by nonresidents to residents	Lending in ringgit by nonresidents to residents: Free to lend any amount of ringgit to resident subsidiaries to finance activities in the real sector in Malaysia. Free to lend up to RM1 million in aggregate to resident companies and individuals for use in Malaysia. Foreign currency lending by nonresidents to residents: Nonresident nonbank parent companies are free to lend any amount in foreign currency to resident subsidiaries in Malaysia. Non resident nonbank companies or individuals are free to lend in foreign currency to a resident provided the borrower's total foreign currency borrowing does not exceed (1)RM100 million equivalent in aggregated on a corporate group basis for a company; (2)RM10 million equivalent for a resident individual.
Nonresident borrowing	Nonresidents are free to borrow in ringgit from licensed onshore bank to finance activities in the real sector in Malaysia, including financing the purchase of ringgit assets. Nonresidents are free to borrow any amount of foreign currency from licensed onshore banks and licensed IIBs.
Liquidity	
spot transaction	Good
forward transaction	Good normally

Sources: Bank Negara Malaysia, IMF "Annual report on Exchange Arrangements and Exchange Restrictions 2008", The Bank of Tokyo-Mitsubishi FUJI, Deutsche Bank

Philippines

BSP: Bangko Sentral ng Pilipinas

Exchange arrangement	Independently floating. Exchange rates are determined by market forces. However, when necessary, the BSP acts to limit sharp fluctuation in exchange rate.
Exchange control	<p>Payment for exports may be made in the following currencies: Australian dollars, Bahrain dinars, Brunei dollars, Canadian dollars, Chinese renminbi, euro, Hong Kong dollars, Indonesian rupiah, Korean won, pound sterling, Saudi Arabian riyals, Singaporean dollars, Swiss francs, Thai baht, U.A.E., dirhams, U.S. dollars, yen and other such currencies that may be declared acceptable by the BSP.</p> <p>The use of domestic currency for international payments and receipts is not allowed, except for imports from and exports to ASEAN countries. However, in practice the bulk of all cross-border payments is settled in U.S.dollars.</p>
bilateral payment arrangements	A bilateral payments agreement with Bank Negara Malaysia(BNM) is in force for an indefinite period. Commercial banks accredited by the BSP are the authorized channels for transactions within the framework of the agreement, and settlements take place through the BSP or the BNM on a net basis over a two-months period.
Domestic currency transactions	
banknotes	Resident and nonresident travelers must obtain authorization from the BSP to exporter export or electronically transfer Philippine notes and coins, checks, money orders, and other bills of exchange drawn in pesos against banks operating in the Philippines in an amount exceeding PHLP 10,000.
resident accounts	Domestic currency accounts convertible into foreign currency are prohibited.
nonresident accounts	<p>Domestic currency accounts are allowed, provided they are funded by inward remittances of foreign currency; by peso income from nonresidents' properties, whether real or personal, located in the Philippines; or by proceeds from the sale of the relevant properties.</p> <p>Balances are convertible if these pertain to (1)deposit by tourists up to the amount of the peso conversion proceeds of foreign currency brought in and sold to the domestic banking system; (2) peso proceeds of the divestment of BSP registered inward foreign investment and accumulated earnings thereon.</p>
Export & Import transactions	<p>Payment for exports may be made in the following currencies: Australian dollars, Bahrain dinars, Brunei dollars, Canadian dollars, Chinese renminbi, euro, Hong Kong dollars, Indonesian rupiah, Korean won, pound sterling, Saudi Arabian riyals, Singaporean dollars, Swiss francs, Thai baht, U.A.E., dirhams, U.S. dollars, yen and other such currencies that may be declared acceptable by the BSP.</p> <p>The use of domestic currency for international payments and receipts is not allowed, except for imports from and exports to ASEAN countries. However, in practice the bulk of all cross-border payments is settled in U.S.dollars. Authorized agent banks may sell foreign exchange for advance payment of imports, whether full or partial, up to US\$100,000 or equivalent without BSP approval; amounts exceeding this limit require BSP approval. Commercial banks may sell foreign exchange for import payments on presentation of the required documents.</p>
Invisible transactions and current transfers	Authorized agent banks may sell foreign exchange for nontrade current account transactions up to US\$30,000 or its equivalent an application without supporting documents. Purchases by residents for these transactions exceeding US\$30,000 an application require presentation of supporting documents.
Forward exchange market	Forward transactions involving the sale of foreign exchange to nonresidents with no full delivery of principal require BSP approval, except for those hedging foreign investments registered with the BSP.
Derivatives	<p>BSP authorized financial institutions may engage in financial derivative activities, provided one of the parties of the transaction is hedging. Foreign exchange regulations and documentary requirements for derivatives apply. Derivatives involving forward purchases of foreign exchange by nonresidents are not allowed except for BSP-registered foreign investments under certain conditions.</p> <p>Nonresidents' derivative transactions involving the local currency require BSP approval.</p> <p>Foreign exchange contracts that do not involve the local currency may be freely contracted by residents. Contracts involving local currency are subject to existing restrictions on the import and export of the local currency.</p>
Capital transactions	
commercial credit	<p>(1)by residents to nonresidents: these transactions may be freely undertaken, provided they do not involve foreign exchange purchased from the banking system.</p> <p>(2)to residents from nonresidents: private sector borrowing may be freely obtained, provided there is no guarantee from the government sector and the domestic banking system, and payments are not funded with domestic banking system resources.</p>
resident to nonresident financial credit operations	Resident banks are not allowed to extend peso loans to nonresidents.
Liquidity	
spot transaction	Fair
forward transaction	Good (1-6 months), Fair (above 6months)

Sources : Bangko Sentral ng Pilipinas, IMF "Annual report on Exchange Arrangements and Exchange Restrictions 2008", The Bank of Tokyo-Mitsubishi UFJ, Deutsche Bank

Singapore

MAS: Monetary Authority of Singapore

Legal basis	Foreign Exchange Transactions Act
Exchange arrangement	Managed floating: The Singapore dollar is allowed to fluctuate within a targeted policy band and is managed against a basket of currencies of the country's major trading partners and competitors.
Exchange control	No restrictions. But some exchange measures for security reasons.
Domestic currency transactions	
resident accounts	Domestic currency accounts held abroad are permitted. Domestic currency accounts convertible into foreign currency are permitted.
nonresident accounts	Domestic currency accounts are permitted. Domestic currency accounts convertible into foreign currency are permitted.
Export & Import transaction	No requirement for repatriation, financing.
Invisible transactions and current transfers	No controls.
Forward exchange market	Banks may hedge their exchange risk through forward foreign exchange transactions.
Capital transactions	
Sale or issue locally by nonresidents	There are no restrictions on sale and issue locally by nonresidents. However, nonresident financial entities must convert Singapore dollar proceeds obtained from Singapore dollar loans (exceeding S\$5million), equity listings, or bond issuance into foreign currency before using such funds to finance activities outside Singapore.
Controls on credit operations by residents to nonresidents	For credit exceeding S\$5million by residents to nonresident financial entities, (1)the proceeds of the credit must be converted into foreign currency before being used by activities outside Singapore, (2)resident must not make credit if the proceeds will be used for speculation purpose.

Liquidity	
spot transaction	Good
forward transaction	Good

Sources : Monetary Authority of Singapore,
IMF "Annual report on Exchange Arrangements and Exchange Restrictions 2008",
The Bank of Tokyo-Mitsubishi UFJ, Deutsche Bank

Liberalization of Singapore dollar "Non-Internationalization" policy

1983	Policy of discouraging internationalization of S\$ in place.
1992	Clarification: S\$ credit facilities extendable to non-residents where S\$ is used for economic activities in Singapore.
1999 Nov	Onshore banks allowed to transact all S\$ interest rate derivatives with non-residents freely.
2000 Dec	Onshore banks allowed to lend S\$ to non-residents for investments in Singapore. S\$ credit facilities to non-residents to fund offshore activities available if S\$ proceeds first swapped into foreign currency.
2002 Mar	Non-resident individuals and non-financial entities exempted from all S\$ lending restrictions. Asset swaps, cross-currency swaps and repos can be transacted freely.
2004 May	Policy of "non-internationalization" formally dropped with renaming of Notice. FX outright (forward positions) permitted. Sole residual guideline on lending of S\$ to non-resident financial institutions.

Source: Monetary Authority of Singapore, "SGD Evolution away from Non-internationalization",
Bank of Korea-BIS Seminar, March 2009

Thailand

BOT:Bank of Thailand

Legal basis	Exchange Control Act / Ministerial Regulation
Exchange arrangement	Managed floating with no predetermined path for the exchange rate
Exchange control	Foreign exchange transactions should be made through authorized financial institutions. Authorized banks should confirm the underlying documents of the transactions. Residents have limit to provide Baht liquidity to nonresidents. Any foreign exchange transaction in an amount US\$20,000 or above must be reported to authorized financial institution in Foreign exchange transaction form.
Domestic currency transactions	
banknotes	There is no restriction on the amount of Thai Baht that may be brought into the country. A person traveling to Thailand's bordering countries including Vietnam is allowed to take out Bahts up to B 500,000 and to other countries up to B 50,000.
nonresident accounts	Nonresidents may open two types of baht accounts: NRBS (Nonresident baht accounts for securities) for investment to domestic securities; NRBA (Nonresident baht accounts) for general purposes. The total daily outstanding balances for each type of account shall not exceed B 300 million per nonresident. Transfers between different types of accounts are not allowed. Domestic financial institutions refrain from paying interests to each account except opening NRBA account as fixed account with maturities of 6 months or over.
Export & Import transactions	Export proceeds in an amount equivalent to US\$20,000 or above shall be repatriated immediately after payment is received and within 360 days of export. The proceeds must be sold to or deposited in foreign currency account with an authorized financial institution in Thailand within 360 days of receipt. Importers may purchase or withdraw foreign currencies from their own foreign currency accounts for import payments upon submission of supporting documents. Purchase of goods between resident shall be paid in baht.
Invisible transactions and current transfers	All proceeds from services in an amount equivalent to US\$20,000 or above shall be repatriated immediately after payment is received and within 360 days of transaction date. The proceeds must be sold to or deposited in a foreign currency account with an authorized financial institution in Thailand within 360 days of receipt.
Forward exchange market	Forward transactions must be related to the underlying trade and financial transactions. Domestic financial institutions are not allowed to undertake NDF transactions against Thai Baht with nonresident.

Thailand (continued)

Capital transactions	
providing Thai Baht liquidity to nonresident	Domestic financial institutions are limited to provide Thai Baht liquidity to nonresident in the case of transaction undertaken without underlyings, the total outstanding balance executed by each financial institution shall not exceed B300 million per group of nonresident.
Thai Baht borrowing by resident from nonresident	Domestic financial institutions are limited to borrow Thai Baht from nonresidents in the case of transaction undertaken without underlyings, the total outstanding balance executed by each financial institution shall not exceed 10 million Baht per group of nonresident.
investment/lending by residents to nonresidents	Residents are allowed to invest in or lend to affiliated business entities abroad as follows: (1)to affiliated business entities abroad is allowed in an aggregate amount not exceeding US\$100 million per year (2)to parent companies abroad, which hold shares or have an ownership not less than 10 %of resident entity, or affiliated business entities of such parent companies abroad in an aggregate amount not exceeding US\$100 million per year. (3)Companies registered with the Stock Exchange of Thailand can invest abroad according to 1) and 2) above without limit, and can lend abroad according to 1) and 2) in an amount, in each case, up to US\$100 million per year
Liquidity	
spot transaction	Good
forward transaction	Good (1-12 months), Fair (above 12months)

Sources : Bank of Thailand, IMF "Annual report on Exchange Arrangements and Exchange Restrictions 2008",
 The Bank of Tokyo-Mitsubishi UFJ, Deutsche Bank

Vietnam

Exchange arrangement	Exchange arrangement is classified as other managed arrangement by the IMF. The State Bank of Vietnam (SBV) announces the daily average interbank exchange rate against the dollar; authorized credit institutions base their bid and offer quotations on this rate. The dollar dong trading band is plus minus tree percent.
Exchange control	Documentation is required when corporate clients want to buy foreign any foreign currency against Vietnamese dong from the authorized banks. If clients buy foreign currency forwards, they are required to provide supporting documents as per spot transactions.
Domestic currency transactions	
resident accounts	Resident organizations are entitled to open and maintain foreign currency accounts at authorized banks. Accounts in domestic currency held abroad are not permitted.
nonresident accounts	Foreign exchange accounts Nonresident organizations may open and maintain foreign currency accounts at authorized banks. Domestic Currency Accounts Nonresident organizations and individuals may open and use dong accounts at authorized credit institutions for domestic payments. Nonresident investors must open an indirect investment dong account with an authorized credit institution to carry out indirect investment in Vietnam
Export & Import transactions	Importers are required to submit to commercial banks relevant documents (such as contracts and licenses) for import payments. All receipts originating from current transactions by resident entities must be repatriated immediately. Payments for invisible related to authorized imports are not restricted. All proceeds originating from current transactions by resident entities must be repatriated immediately.
Capital transactions	
Controls apply to all transactions in capital and money market instruments and in collective investment securities. Resident organizations issuing selling foreign-currency-denominated securities abroad are required to open a securities issuance account in foreign currency at an authorized credit institution. In order to sell or purchase listed securities on the stock exchange, foreign organizations and individuals are required to open a securities trading account denominated in dong. Enterprises are subject to annual overall external borrowing ceilings and the fulfillment of certain other conditions.	
Liquidity	
spot transaction	Poor
forward transaction	Very Poor

Sources : IMF "Annual report on Exchange Arrangements and Exchange Restrictions 2008",
The Bank of Tokyo-Mitsubishi UFJ, Deutsche Bank

4-3. How do foreign exchange restrictions and capital controls affect foreign exchange markets?

“BIS Triennial Central Bank Survey: Foreign exchange and derivatives market activity in 2007” is a survey on foreign exchange markets across the globe. The survey contains data on foreign exchange markets of ASEAN+3 member countries, such as China, Hong Kong SAR, Indonesia, Japan, Korea, Malaysia, the Philippines, Singapore, and Thailand. This section describes the foreign exchange markets in ASEAN+3 countries, and points out some characteristics of these markets, reflecting the restrictions on foreign exchange and capital account transactions in these countries.

The global foreign exchange market turnover has been expanding at quite a rapid pace. It was US\$ 1,626 billion in 2001 and rose to US\$ 3,998 billion in 2007. Focusing on the above ASEAN+3 countries, the combined share of these countries in the world did not show a rising trend. The share of these countries except Japan was 11.5 percent in 2001 and 11.6 percent in 2007. The share of Japan decreased from 9.1 percent in 2001 to 6.0 percent in 2007 (see Table 4-3).

Table4-3: Foreign exchange turnover by country in April 1989–2007

Daily averages, in billions of US dollars							
	1989	1992	1995	1998	2001	2004	2007
Total (Amount)	716	1,076	1,572	1,969	1,616	2,429	3,988
Developed countries except Japan	...	...	...	1,550	1,226	1,869	3,098
United States	115	167	244	351	254	461	664
United Kingdom	184	290	464	637	504	753	1,359
Europe except United Kingdom (1)	...	...	...	471	370	492	833
Other developed countries except Japan (2)	...	55	77	91	98	163	242
Developing Countries except ASEAN+3	...	...	...	53	59	106	192
Africa & Middle East (3)	...	...	...	13	16	20	29
Asia & Pacific except ASEAN+3 (4)	...	...	...	7	7	15	49
Europe (5)	...	...	...	16	20	49	86
Latin America/Caribbean (6)	...	...	...	17	16	22	28
ASEAN+3	...	...	...	365	333	455	700
ASEAN+3 excluding Japan	...	...	...	229	186	256	462
China	...	...	...	0	...	1	9
Hong Kong SAR	49	60	90	79	67	102	175
Indonesia	...	...	...	2	4	2	3
Japan	111	120	161	136	147	199	238
Korea	...	...	...	4	10	20	33
Malaysia	...	...	...	1	1	2	3
Philippines	...	...	...	1	1	1	2
Singapore	55	74	105	139	101	125	231
Thailand	...	...	...	3	2	3	6
Total (Percentage share)	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Developed countries except Japan	...	...	...	78.7	75.9	76.9	77.7
United States	16.1	15.5	15.5	17.8	15.7	19.0	16.6
United Kingdom	25.7	27.0	29.5	32.4	31.2	31.0	34.1
Europe except United Kingdom (1)	...	...	...	23.9	22.9	20.3	20.9
Other developed countries except Japan (2)	...	5.1	4.9	4.6	6.1	6.7	6.1
Developing Countries except ASEAN+3	...	...	...	2.7	3.7	4.4	4.8
Africa & Middle East (3)	...	...	...	0.7	1.0	0.8	0.7
Asia & Pacific except ASEAN+3 (4)	...	...	...	0.4	0.4	0.6	1.2
Europe (5)	...	...	...	0.8	1.2	2.0	2.2
Latin America/Caribbean (6)	...	...	...	0.9	1.0	0.9	0.7
ASEAN+3	...	...	...	18.5	20.6	18.7	17.6
ASEAN+3 excluding Japan	...	...	...	11.6	11.5	10.5	11.6
China	...	...	...	0.0	...	0.0	0.2
Hong Kong SAR	6.8	5.6	5.7	4.0	4.1	4.2	4.4
Indonesia	...	...	...	0.1	0.2	0.1	0.1
Japan	15.5	11.2	10.2	6.9	9.1	8.2	6.0
Korea	...	...	...	0.2	0.6	0.8	0.8
Malaysia	...	...	...	0.1	0.1	0.1	0.1
Philippines	...	...	...	0.1	0.1	0.0	0.1
Singapore	7.7	6.9	6.7	7.1	6.3	5.1	5.8
Thailand	...	...	...	0.2	0.1	0.1	0.2

The data in the above table covers 54 countries in the table E. 16 in the below source.

- (1) Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland
- (2) Australia, Canada, New Zealand
- (3) Bahrain, Israel, Saudi Arabia, South Africa
- (4) India, (Taiwan, China)
- (5) Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Russia, Slovakia, Slovenia, Turkey
- (6) Argentina, Brazil, Chile, Colombia, Mexico, Peru

Source: BIS, Triennial Central Bank Survey: Foreign Exchange and Derivatives Market Activity in 2007 (Table E.16)
; author's calculation

However, focusing on the turnovers of ASEAN+3 countries' currencies, they are on a rising trend. Although the share of the Japanese yen decreased from 19.9 percent in 2001 to 16.5 percent in 2007, the combined share of the other countries' currencies increased from 4.1 percent in

2001 to 6.1 percent in 2007. Every currency of ASEAN+3 except Japanese Yen expanded its presence in the global foreign exchange market (see Table 4-4). Please note that the total of the share percentages of all currencies is 200 percent instead of 100 percent, as every foreign exchange transaction involves two currencies.

Table 4-4: Currency distribution of foreign exchange turnover at April 2007 exchange rates

Percentage share of average daily turnover in April

	2001	2004	2007
US dollar	76.16	85.20	86.35
Euro	48.06	40.00	36.98
Japanese yen	19.89	17.56	16.54
Pound sterling	15.47	17.88	14.95
Swiss franc	7.22	6.19	6.78
Other Western European currencies	5.26	5.01	5.85
Other developed countries' currencies	11.41	12.26	12.78
Africa & Middle East currencies	1.09	0.84	1.14
Asia except ASEAN+3	0.46	0.73	1.07
Developing European currencies	1.29	1.86	2.46
Latin American currencies	1.22	1.66	1.86
ASEAN+3 except Japan	4.06	4.74	6.14
Hong Kong dollar	1.88	1.78	2.78
Singapore dollar	0.94	1.02	1.22
Korean won	0.88	1.40	1.10
Chinese renminbi	0.01	0.10	0.47
Thai baht	0.19	0.23	0.21
Malaysian ringgit	0.07	0.06	0.14
Philippine peso	0.04	0.05	0.11
Indonesia rupiah	0.05	0.10	0.11
Other currencies	8.44	6.06	7.10
All currencies	200.0	200.0	200.0

Notes:

Other Western European Currencies: Swedish krona, Norwegian krone,
Other developed countries' currencies: Australian dollar, Canadian dollar, New Zealand dollar

Africa & Middle East currencies: South African rand, Israeli new shekel, Saudi riyal, Bahraini dinar

Asia except ASEAN+3: Indian rupee, New Taiwan dollar

Developing European currencies: Russian rouble, Polish zloty, Hungarian forint, Czech koruna, Turkish lira, Slovak koruna, Romania leu, Lithuanian litas, Estonian kroon, Latvian lats, Bulgarian lev

Latin American currencies: Mexican peso, Brazilian real, Chilean peso, Colombian peso, Argentine peso, Peruvian new sol

Source: BIS, Triennial Central Bank Survey: Foreign Exchange and Derivatives Market Activity in 2007 (Table D..5)

Most foreign exchange transactions of East Asian local currencies were against the US dollar in 2007. In Japan, the share of the foreign exchange transactions of the local currency (the Japanese yen) against the US dollar as against all currencies was 82 percent. In other East Asian countries, the shares of transactions of their local currencies against the US dollar were well over 90 percent (see Table 4-5).

Table4-5: Foreign exchange turnover by country and currency in April 2007

Local currency against:

Daily averages, in millions of US dollars

(in millions of US\$)	Total	US dollar	Euro	Yen	Pound sterling	Swiss franc	Canadian dollar	Australian dollar	Swedish krona	Residual currencies
Total (Amount)	1,807,852	1,041,616	280,577	121,504	103,967	51,228	50,011	38,593	9,506	110,849
Developed countries except Japan	1,382,947	662,075	256,037	120,281	97,048	50,000	48,288	34,258	9,165	105,798
Developing Countries except ASEAN+3	110,057	99,200	9,622	256	303	301	21	31	15	302
ASEAN+3	314,846	280,340	14,919	970	6,616	927	1,701	4,302	326	4,746
ASEAN+3 excluding Japan	145,272	141,494	842	970	323	92	126	187	6	1,233
China	9,056	9,030	6	3	0	0	0	0	0	17
Hong Kong SAR	73,407	72,521	0	0	0	0	0	0	0	887
Indonesia	1,829	1,689	51	60	5	0	1	2	0	21
Japan	169,574	138,846	14,077	0	6,293	835	1,575	4,115	320	3,513
Korea	27,105	26,099	351	456	55	3	18	36	1	87
Malaysia	2,719	2,651	31	16	5	0	0	3	0	14
Philippines	2,168	2,154	6	4	1	0	0	0	0	1
Singapore	24,249	22,937	315	249	223	85	105	138	2	195
Thailand	4,739	4,413	82	182	34	4	2	8	3	11
(Percentage Share)										
Total	100.0	57.6	15.5	6.7	5.8	2.8	2.8	2.1	0.5	6.1
Developed countries except Japan	100.0	47.9	18.5	8.7	7.0	3.6	3.5	2.5	0.7	7.7
Developing Countries except ASEAN+3	100.0	90.1	8.7	0.2	0.3	0.3	0.0	0.0	0.0	0.3
ASEAN+3	100.0	89.0	4.7	0.3	2.1	0.3	0.5	1.4	0.1	1.5
ASEAN+3 excluding Japan	100.0	97.4	0.6	0.7	0.2	0.1	0.1	0.1	0.0	0.8
China	100.0	99.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Hong Kong SAR	100.0	98.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2
Indonesia	100.0	92.3	2.8	3.3	0.3	0.0	0.1	0.1	0.0	1.1
Japan	100.0	81.9	8.3	0.0	3.7	0.5	0.9	2.4	0.2	2.1
Korea	100.0	96.3	1.3	1.7	0.2	0.0	0.1	0.1	0.0	0.3
Malaysia	100.0	97.5	1.1	0.6	0.2	0.0	0.0	0.1	0.0	0.5
Philippines	100.0	99.4	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Singapore	100.0	94.6	1.3	1.0	0.9	0.4	0.4	0.6	0.0	0.8
Thailand	100.0	93.1	1.7	3.8	0.7	0.1	0.0	0.2	0.1	0.2

Developed countries except Japan are 23 countries, and developing countries except ASEAN+3 are 22 countries stipulated in the table E. 7 in the below source.

Source: BIS, Triennial Central Bank Survey: Foreign Exchange and Derivatives Market Activity in 2007 (Table E. 7); author's calculation

The Restrictions on foreign exchange and capital account transactions have strongly affected the structure of foreign exchange markets in East Asia. This section points out three characteristics of foreign exchange markets in East Asia. They might show that these restrictions in East Asia are more effective and stronger than the world average.

The first characteristic is a small size of foreign exchange turnover relative to trade flows. In order to measure the volume, we calculate the foreign exchange turnover of a currency in multiples of its country's trade flows (sum of exports and imports) for every currency stipulated in the BIS Triennial Central Bank Survey. In many countries in East Asia, the multiple numbers are much lower than the world average.

In 2007, the world average multiple number was around 30. It means that the world foreign exchange turnover was 30 times as large as the sum of world exports and imports. The number was 232 for the US dollar, 38 for Euro, 116 for Sterling pound, and 149 for Swiss franc. It would be natural that the number for the US dollar is so high, as the US dollar is traded all over the world. Although the numbers for other major currencies are not as high as that for the US dollar, they are higher than the world average.

Looking at ASEAN+3 member countries' currencies, the number was 109 for Japanese yen and 47 for Hong Kong dollar, which were well above the world average of 30. It was 23 for Singapore dollar and 13 for Korean won, which were lower than the world average. It was 6.2 for Philippine dollar, 5.5 for Thai baht, 3.8 for Indonesian rupiah, and 1.6 for Chinese renminbi. They were much lower than the world average.

What are the factors behind these extremely low numbers? All of these East Asian countries have accepted the obligations of article VIII of the IMF agreements. They all commit to refrain from imposing restrictions on payments and transfers for current international transactions and from engaging in discriminatory currency arrangements. However, the so-called "real demand rule" (a foreign exchange contract needs to correspond to a bona fide transaction) might restrict opportunities for foreign exchange rate risk hedging, and the capital account restrictions might be detrimental to the growth of foreign exchange markets in East Asia.

The multiple numbers for developed countries' currencies were large. This is because large foreign exchange turnovers compared to trade flows were supported by active foreign exchange and capital account transactions due to more enhanced liberalization or deregulation on these transactions (see table 4-6).

Table4-6: Relative Size of Foreign Exchange Turnover to trade flows

	Foreign Exchange Turnover (1)	Foreign exchange turnover in multiples of trade flows (2)
	Million of US\$	multiple number
Total	3,324,236	29.7
US Dollar	2,845,445	232.6
Euro	1,231,194	38.0
Pound sterling	494,206	115.5
Swiss franc	226,821	148.5
Canadian dollar	142,599	45.8
Australian dollar	219,967	185.8
Swedish krona	89,766	70.5
Brazilian real	13,100	10.9
Czech koruna	7,117	7.9
Danish krone	27,988	37.0
Forint	8,945	12.3
Indian Rupee	23,624	14.9
Mexican peso	43,564	21.8
Norwegian krone	69,939	84.0
New Zealand dollar	63,020	290.1
Polish Zloty	25,356	21.3
Russian Rouble	24,908	10.5
South African Rand	30,294	48.1
New Taiwan dollar	12,082	6.0
Turkish lira	5,939	5.7
ASEAN+3		
Japanese Yen	573,414	108.7
Chinese Renminbi	15,008	1.6
Hong Kong dollar	89,915	46.8
Indonesian Rupiah	3,667	3.8
Korean Won	38,425	13.4
Philippine peso	3,507	6.2
Singapore dollar	38,804	22.8
Thai Baht	6,498	5.5

(1) Average daily turnover in April 2007

(2) Average daily turnover in April 2007 divided by average daily gross trade flows (sum of exports and imports of a country issuing the currency) in 2007. Daily gross trade flows are calculated as annual data divided by 252.

Source: BIS, Triennial Central Bank Survey: Foreign Exchange and Derivatives Market Activity in 2007 (Table E. 1 and E. 20); IMF, Direction of Trade Statistics

The second characteristic of foreign exchange transactions of East Asian currencies is that the shares of cross-border transactions between residents and non-residents are significantly lower than the shares of the local transactions among residents. In the cases of Japanese yen, Hong Kong dollar, and Singapore dollar, foreign exchange transactions consisted of roughly 70 percent of

cross-border transactions and 30 percent of local transactions. These structures are similar to those of developed countries' currencies. In the cases of Chinese renminbi, Indonesian rupiah, Korean won, Philippine peso, and Thai baht, however, foreign exchange transactions consisted of roughly 30 percent of cross-border transactions and 70 percent of local transaction (see Table 4-7).

This reflects the fact that restrictions on cross-border foreign exchange transactions between residents and non-residents are stricter than those on local foreign exchange transactions among residents. These countries impose restrictions on cross-border or off-shore transactions in order to keep stable their own currencies' value and their domestic financial and capital market. This fact shows that these restrictions are more effective and stricter than the world average.

Table 4-7: Foreign exchange turnover by instrument, counterparty and currency in April 2007
Total reported transactions in all currencies

Daily average, in millions of US dollars																
	Total	US Dollar	Euro	Western European currencies other than Euro (1)	Central and Eastern European currencies (2)	Other Developed country currencies (3)	Developing country currencies other than ASEAN+3 (4)	Yen	Chinese renminbi	Hong Kong dollar	Indonesia n rupiah	Korean won	Philippine peso	Singapore dollar	Thai baht	
(million US\$)																
Total	3,324,236	2,845,445	1,231,194	908,720	41,418	374,648	141,429	573,414	15,008	89,915	3,667	38,425	3,507	38,804	6,498	
Spot	1,004,889	790,233	420,038	274,078	9,440	96,748	55,339	205,958	8,981	15,715	1,434	15,222	1,275	8,491	1,206	
Outright forwards	361,730	289,435	137,391	85,342	5,433	40,467	20,914	61,453	4,572	6,022	1,292	10,013	1,123	2,962	847	
Foreign exchange swaps	1,714,370	1,580,594	581,977	490,552	24,874	209,445	53,232	242,319	1,078	63,895	560	8,812	1,053	26,209	4,325	
Currency Swaps	31,497	27,333	11,240	8,435	236	4,311	1,764	3,495	133	420	148	1,303	13	154	59	
Options	211,657	157,850	80,549	50,312	1,435	23,676	10,180	60,188	244	3,863	233	3,075	43	987	61	
By instrument (Percentage share, %)																
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Spot	30.2	27.8	34.1	30.2	22.8	25.8	39.1	35.9	59.8	17.5	39.1	39.6	36.4	21.9	18.6	
Outright forwards	10.9	10.2	11.2	9.4	13.1	10.8	14.8	10.7	30.5	6.7	35.2	26.1	32.0	7.6	13.0	
Foreign exchange swaps	51.6	55.5	47.3	54.0	60.1	55.9	37.6	42.3	7.2	71.1	15.3	22.9	30.0	67.5	66.6	
Currency Swaps	0.9	1.0	0.9	0.9	0.6	1.2	1.2	0.6	0.9	0.5	4.0	3.4	0.4	0.4	0.9	
Options	6.4	5.5	6.5	5.5	3.5	6.3	7.2	10.5	1.6	4.3	6.4	8.0	1.2	2.5	0.9	
Local or cross-border transactions (%)																
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
local	38.2	37.3	36.0	39.3	38.4	40.1	52.5	34.9	69.5	33.2	59.2	63.4	67.1	39.9	66.6	
cross-border	61.8	62.5	63.9	60.6	61.6	59.7	47.3	65.0	29.6	65.9	39.5	35.5	32.7	59.7	33.3	
By counterparty (%)																
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
with reporting dealers	42.9	44.1	39.5	41.4	42.3	43.6	41.8	44.0	54.2	61.1	49.4	60.9	71.4	59.1	55.8	
with other financial institutions	39.5	40.0	41.3	38.8	37.3	40.1	40.6	37.6	40.8	28.1	27.3	20.2	21.3	28.7	18.1	
with non-financial customers	17.5	15.7	19.2	19.7	20.4	16.1	17.4	18.3	4.1	9.9	22.1	17.8	7.1	11.8	26.0	

(1) Western European currencies other than Euro: Pound sterling, Swiss franc, Swedish krona, Danish krone, Norwegian krone

(2) Central and Eastern European currencies: Hungary forint, Czech koruna, Polish zloty

(3) Other Developed country currencies: Canadian dollar, Australian dollar, New Zealand dollar, New Taiwan dollar

(4) Developing country currencies other than ASEAN+3: Brazilian real, Indian Rupee, Mexican peso, Russian rouble, South African rand, Turkish lira

Source: BIS, Triennial Central Bank Survey: Foreign Exchange and Derivatives Market Activity in 2007 (Table E. 1 and E. 20); author's calculation

The third characteristic is relatively lower share of foreign exchange swaps in the total foreign exchange transactions for East Asian currencies except Japanese yen, Hong Kong dollar, Singapore dollar and Thai baht. There are several kinds of foreign exchange instruments, such as spot, outright forwards, foreign exchange swaps, currency swaps, and options. The share of foreign exchange swaps in all foreign exchange instruments for all currencies are 52 percent. As regards East Asian currencies, the share is 42 percent for Japanese yen, 71 percent for Hong Kong dollar, 68 percent for Singapore dollar, and 67 percent for Thai baht. The shares for other currencies are rather low. It is 15 percent for Indonesian rupiah, 23 percent for Korean won, 30 percent for Philippine peso, and 7 percent for Chinese renminbi (see Table 4-7).

Why are the shares of foreign exchange swaps for these currencies so low for many countries in East Asia? The low shares might reflect the limited opportunity of interest rate arbitrage transaction for residents and non-residents in those countries. This could be attributable to the restrictions on foreign exchange and capital account transactions, particularly cross-border lending and borrowing denominated both in national currency and in foreign currencies, as well as the regulations which require foreign exchange transactions to correspond to a bona fide underlying transaction.

The share of foreign exchange swaps is very high for Hong Kong dollar and Singapore dollar. This is because foreign exchange swaps are one of the major financial instruments for fund raising and management, particularly in their money markets, thanks to freer foreign exchange and financial markets in Hong Kong and Singapore.

On top of these characteristics of foreign exchange market structure in East Asia, foreign exchange and capital control is reflected in the high transaction costs of East Asian currencies as well. Taking bid-ask spreads of spot and forward foreign exchange rates of currencies against the US dollar as an indicator of transaction costs, the spreads of Japanese yen, Hong Kong dollar, and Singapore dollar are as low as those of major hard currencies of developed countries such as Euro or Sterling pound. Aside from these Asian currencies, the spreads of other East Asian currencies tend to be higher than those of major hard currencies (see table 4-8). This shows the higher transaction costs for many East Asian currencies.

Table 4-8: Transaction costs: Major hard currencies vs. East Asian currencies

Bid-ask Spread of Foreign Exchange Quotation (%)
- Spot and Forward Rates (1month, 3month, and 6month) -

<Developed Countries>

	Euro	Japanese yen	UK pound	Euro/yen	Swiss francs	Sweden kroner	Canadian dollar	Australian dollar
April, 2007								
spot	0.016%	0.026%	0.019%	0.044%	0.027%	0.075%	0.035%	0.037%
1m	0.012%	0.028%	0.020%	0.047%	0.031%	0.078%	0.038%	0.039%
3m	0.018%	0.029%	0.021%	0.048%	0.036%	0.094%	0.041%	0.040%
6m	0.020%	0.032%	0.024%	0.054%	0.039%	0.087%	0.001%	0.044%
April, 2008								
spot	0.014%	0.025%	0.025%	0.040%	0.053%	0.085%	0.055%	0.037%
1m	0.017%	0.031%	0.030%	0.048%	0.059%	0.094%	0.063%	0.044%
3m	0.019%	0.034%	0.030%	0.053%	0.065%	0.101%	0.065%	0.047%
6m	0.025%	0.038%	0.040%	0.063%	0.072%	0.102%	0.075%	0.057%
April, 2009								
spot	0.037%	0.055%	0.042%	0.094%	0.102%	0.212%	0.089%	0.109%
1m	0.041%	0.060%	0.045%	0.100%	0.106%	0.224%	0.096%	0.117%
3m	0.040%	0.063%	0.048%	0.104%	0.110%	0.236%	0.104%	0.129%
6m	0.052%	0.071%	0.061%	0.123%	0.129%	0.243%	0.123%	0.149%

<Asian Countries>

	Singapore dollar	HK dollar	Chinese renminbi	Korean won	Malaysian ringgit	Thai baht	Indonesian rupiah	Philippine peso
April, 2007								
spot	0.055%	0.010%	0.007%	0.035%	n.a.	3.989%	0.082%	0.043%
1m	0.055%	0.013%	0.017%	0.038%		3.989%	0.097%	0.043%
3m	0.055%	0.027%	0.026%	0.043%		3.989%	0.206%	0.127%
6m	0.055%	0.046%	0.050%	0.050%		3.989%	0.328%	0.338%
April, 2007								
spot	0.065%	0.012%	0.010%	0.039%	n.a.	0.472%	0.081%	0.236%
1m	0.065%	0.016%	0.140%	0.047%		0.472%	0.103%	0.237%
3m	0.065%	0.025%	0.185%	0.063%		0.472%	0.206%	0.237%
6m	0.065%	0.050%	0.449%	0.089%		0.472%	0.327%	0.237%
April, 2007								
spot	0.103%	0.005%	0.000%	0.065%	0.121%	0.354%	0.348%	0.369%
1m	0.124%	0.010%	0.025%	0.824%	0.123%	0.398%	0.366%	0.370%
3m	0.146%	0.012%	0.059%	1.372%	0.146%	0.463%	0.406%	0.370%
6m	0.163%	0.021%	0.134%	2.135%	0.174%	0.550%	0.470%	0.370%

Source: Bloomberg (Currency FRD page)

Note: All exchange rates are quoted against the US dollar except for Euro/yen. Each figure is the average of bid-ask spread data on April 2007, April 2008, and April 2009, respectively.

4-4. Improvement of Foreign Exchange Settlement system in Asia

Another reason to keep the transaction volume of Asian currencies very low and limited is the underdeveloped settlement systems in East Asia as a whole. There are two possible ways to make the foreign exchange settlement systems improved. One is to increase the number of CLS member countries, and the other is to create a new RTGS (Real Time Gross Settlement) system in Asia.

4-4-1. Increase the member countries of CLS

CLS (Continuous Linked Settlement) is the largest multi-currency cash settlement system, eliminating settlement risk for over half of the global FX payment instructions. Since it began operations in 2002, CLS has rapidly become the market-standard for foreign exchange settlement between major banks. As of end of 2009, 17 central banks have made their currencies eligible for CLS Settlement. In Asia, only 4 central banks, such as Bank of Japan, Bank of Korea, Hong Kong Monetary Authority, and Monetary Authority of Singapore joined CLS and there are 13 CLS commercial bank members (6 Japanese banks, 3 Korean banks, 3 Singapore banks and 1 Hong Kong bank).¹⁹

CLS Settlement is the only means by which settlement risk can be eliminated with finality using a unique combination of payment versus payment (or PVP) in central bank funds, multilateral payment netting and a standard legal framework, supported by a robust and resilient infrastructure. By using a payment versus payment (PVP) system whereby both sides' instructions for an FX trade are settled simultaneously, CLS Bank eliminates settlement risk.

Traditional correspondent banking settlement is now known as a gross non-PVP settlement. Under this settlement method, both selling and buying counterparties typically use their correspondent banks in the currencies concerned. Because the transfer of the sold currency takes place independently of the transfer of the bought currency, this method exposes the counterparties to principal and liquidity risks to the full value of the trade. Another long-standing method is bilateral netting, whereby the FX trades between two counterparties due on a certain date are netted and the net amounts then settled by another method, such as traditional correspondent banking. Provided the netting is legally valid, this reduces risk to the extent that the net amounts are smaller than the original gross amounts.

¹⁹ Bank of China (Hong Kong), Bank of Tokyo-Mitsubishi UFJ, DBS Bank, Kookmin Bank, Korea Exchange Bank, Mitsubishi UFJ Trust and Banking, Mizuho Corporate Bank, Norinchukin Bank, Overseas-Chinese Banking Corporation, Shinhan Bank, Sumitomo Mitsui Banking Corporation, Sumitomo Trust & Banking Co., United Overseas Bank

Table 4-9, based on the survey results by the Committee on Payment and Settlement Systems (CPSS, BIS) in 2008 gives the corresponding breakdown by currency for the three main settlement methods. Among four Asian countries who are CLS members, there are differences in the share of CLS. In Japan, the share of CLS is the largest, which is 62 %. In Singapore, the share of CLS is 52 %, which is larger than the share of traditional correspondent banking, 42 %. In Hong Kong, the share of CLS is nearly same as the share of traditional correspondent banking.²⁰ In Korea, the share of CLS is only 30 % and the traditional correspondent banking is mainly used. In other Asian countries, the traditional correspondent banking seems to be the main method of settlements.

Table 4-9. Settlement methods by currency

Currency	CLS	Traditional correspondent banking	Bilateral netting (effect)	Other settlement methods
USD	55%	31%	8%	6%
EUR	58%	29%	7%	5%
JPY	62%	24%	8%	6%
GBP	54%	32%	9%	5%
CHF	58%	26%	8%	7%
AUD	58%	30%	8%	3%
CAD	38%	43%	13%	6%
HKD	47%	46%	1%	6%
KRW	30%	65%	2%	3%
NZD	59%	30%	7%	4%
SGD	52%	42%	3%	2%
All others	-	84%	13%	3%
Total	55%	32%	8%	5%

Source: CPSS-Progress in reducing FXSR- May 2008, BIS

CLS settlements are eligible under the following conditions;

- both counterparties must be CLS-enabled
- both currencies must be eligible

In order to make Asian currency markets safer and more efficient, a wide-spread adoption of CLS in Asia is essential. In addition to Bank of Japan, Bank of Korea, Hong Kong Monetary Authority, and Monetary Authority of Singapore, other Asian central banks are urged to become CLS member countries in order to eliminate the foreign exchange settlement risks in Asian currencies.

²⁰ Hong Kong has local RTGS system in each of three currencies, the Hong Kong dollar, the US dollar and the Euro.

4-4-2. Creating a new RTGS system in Asia

Real time gross settlement systems (RTGS) are funds transfer systems where transfer of money takes place from one bank to another on a "real time" and on "gross" basis. Settlement in "real time" means payment transaction is not subjected to any waiting period. The transactions are settled as soon as they are processed. "Gross settlement" means the transaction is settled on one to one basis without bunching or netting with any other transaction. This "electronic" payment system is normally maintained or controlled by the Central Bank of a country. There is no physical exchange of money; the Central Bank makes adjustments in the electronic accounts of Bank A and Bank B, reducing the amount in Bank A's account by \$1000 and increasing the amount of Bank B's account by the same. The RTGS system is suited for low-volume, high-value transactions. It lowers settlement risk, besides giving an accurate picture of an institution's account at any point of time.

RTGS systems can cover multiple countries. For example, TARGET and TARGET 2 (Trans-European Automated Real-time Gross Settlement Express Transfer System) includes 26 countries of the EU countries. TARGET is an interbank payment system for the real-time processing of cross-border transfers in euro throughout the European Union. Before introducing the euro, the majority of EU member states already had their own RTGS systems, but only for the settlement of transactions in their national currencies. The TARGET system was built by linking together the different 17 RTGS structures that existed at the national level and the ECB payment mechanism (EPM). TARGET commenced operation on 4 January 1999 following the launch of the euro. Between November 2007 to May 2008, TARGET was replaced by an enhanced and streamlined version of the system, TARGET 2 successfully.

In Asia, Hong Kong Monetary Authority established the Hong Kong dollar and the US dollar RTGS system in September 2002 to enable PVP settlement for US /HKD FX trade. Based on the experiences of this link, the HKD and USD RTGS systems were linked to the euro RTGS system in Hong Kong in April 2003 to enable PVP settlement for USD/EUR and EUR/HKD FX trade as well. In addition, Hong Kong started to establish cross-border links with the clearing and settlement systems of other Asian countries as follows:

- In November 2006, Hong Kong and Malaysia set up a cross-border PVP link between Hong Kong's USD RTGS system and Malaysia's ringgit RTGS system.
- In March 2009, a cross border link for fund transfers between Hong Kong's RTGS systems and the Mainland's foreign currency RTGS systems was launched. This cross border link facilitates 2-way real-time USD, HKD and Euro funds transfers between banks in Hong Kong and banks participating in the RTGS systems of the respective currencies in the Mainland of China.
- Effective on 25 May 2009, the RTGS systems of all clearing currencies are able to support payment transactions transmitted in SWIFT message format.
- In January 2010, the Hong Kong Monetary Authority and Bank Indonesia have launched a new

cross-border PVP link between Hong Kong's US dollar RTGS and Indonesia's Rupiah RTGS system.

These movements will develop Hong Kong into a payment and settlement hub for the region.

Following TARGET 2 in EU and the development of cross-border RTGS settlement in Hong Kong, creating an Asian-wide cross-border RTGS system would be an essential step for more efficient transactions of foreign currencies, which can help mitigate settlement risk in inter-bank FX trades and promote more active FX transaction in Asian markets. An early push toward the region-wide cross-border RTGS system will be recommended.

4-4-3. Challenge to create a “Direct Foreign Exchange Trading Market” between Asian currencies

During the 1980s and '90s, there was a very large expansion of direct cross trading, in which the US dollar was not involved as medium of exchange. Much of this direct cross trading activity involved the Deutsche mark. Direct trading activity between the mark and other European currencies developed to the point where most trading of currencies in the European Monetary System took place directly through cross rates, and the most widely direct-traded crosses came to be used to quote rates for other, less widely traded currency pairs. By the mid-1990s, mark-yen, sterling-mark, mark- French franc, and mark-Swiss all were very actively traded pairs. Actually, there was a quotation of mark-yen in Tokyo FX market in 1990's. After the introduction of the euro in 1999, such a cross trading activity was largely changed. With the euro replacing a number of European currencies, much of the earlier cross trading was no longer being required. What role the euro itself may play as a vehicle currency remains to be seen.

The reason why direct cross trading activities were seen in European market is due to the existence of de facto vehicle currency of the region, the Deutsche mark and there were various needs for bilateral transactions between European currencies. Contrary to European market, there has been neither strong main currency like the Deutsche mark in Asia nor strong needs for bilateral transaction between Asian currencies. Why the yen has not become a regional vehicle currency like the German Mark needs a long historical survey, which does not fit in this report. As explained in chapter 2, most intra-regional trades are invoiced in the US dollar at the moment. According to the rapid increase of intra-trade dependence as a final destination, however, the needs for bilateral transaction between Asia currencies will be growing in near future.

A cross rate is an exchange rate involving two currencies other than the US dollar. Since all Asian currencies are generally quoted vis-à-vis the US dollar, cross rates between Asian currencies are calculated from US dollar rates. There are two shortcomings of using the cross rate. First, the spreads of cross rate quotation are usually equal to or wider than the sum of two spreads of

two exchange rates quotations vis-à-vis the US dollar. Second, the extra settlement risk might occur to cover cross currency trading. For example, won/yen is made by won/ dollar and yen/dollar trading. If there were won/yen direct market, settlements of won and yen would be done simultaneously. Since there is no won/yen direct market at the moment, however, extra settlement risk of US dollar occurs.

Since the transaction volume of the Japanese yen is the largest among Asian currencies, the Japanese yen should be the first candidate currency to create direct foreign exchange transaction between Asian currencies. In order do create yen-Asian currency direct markets, the Japanese yen should satisfy the following requirements.

- Increase the transaction volume of the Japanese yen
 - Increase yen invoicing in intra-regional trades by Japanese firms
 - Increase yen denominated bond in Asian market
- Improvement of settlement system of the Japanese yen related transactions
- Efforts to offer yen-Asian currency quotation in foreign exchange market
 - Efforts by financial institutions and FX brokers
 - Assistance by Central banks

At the moment, three Asian central banks in addition to Bank of Japan joined CLS members, and then the Korean won, the Hong Kong dollar and the Singapore dollar will be the candidates of pair currency of the Japanese yen.

Theoretically, direct transaction between Asian currencies will provide huge benefits in Asian economies. However, the most important thing is whether there is strong demand for such transactions now. If not region-wide, whether there are some pairs of currencies that have strong demands is a relevant question. In order to win large orders of transactions from the public and private sectors, collection and exchange information among Asian countries will be indispensable.

4-5. Sequencing Capital Account Liberalization in General

Regulations on foreign exchange and capital account transactions could be impediments to the use of local currencies in foreign trade of East Asian countries. The liberalization of these regulations can encourage the use of local currencies by increasing foreign exchange and capital account transactions and thus reducing the costs of transactions denominated in these local currencies.

When planning and implementing the liberalization, the sequencing of liberalization is very important. The wrong sequencing could increase opportunity for non-residents to take speculative actions in the markets. Speculative selling or buying of local currencies can destabilize

not only the foreign exchange market but also domestic financial markets. One of the principles of the sequencing would be that the liberalization of cross-border financial transactions should be preceded by the deregulation of domestic financial system.

This part summarizes what is necessary for the sequencing of liberalization, by referring to the literature “Capital Account Liberalization and Financial Sector Stability,” by a Staff Team led by Shogo Ishii and Karl Habermeier (IMF Occasional Paper, No211, 2002).

In a world of growing financial globalization, capital account liberalization can undermine financial stability. This has been evidenced by growing frequency of financial crisis in recent years. How do you reap the benefits of liberalization from increased financial and capital market access while coping with the risks associated with international capital flows? This question has been very important and will be more important in the future.

In general, financial stability depends on the ability of financial and non financial institutions as well as the government to manage financial risks. It also depends on legal, institutional, and prudential arrangement. Financial instability comes from disturbances arising from the improper linkages between the financial sector and the macro-economy, structural weakness in the financial sector, and certain types of government involvement in the financial sector.

The followings are necessary for financial stability.

- (i) Macro-economic stability and structural policies and conditions consistent with a sound and efficient domestic sector;
- (ii) Development of financial markets and institutions; prudential regulations and supervision; risk management and good practices in accounting, auditing, and disclosure to assist it; and financial safety nets; and
- (iii) Policies to deal with insolvency, strengthen corporate governance and creditor’s rights, promote systemic restructuring of financial and nonfinancial institutions, and improve public debt and foreign exchange reserve management, transparency of public policies, and statistics.

We should also note the importance of the choice of an appropriate exchange rate regime that will support a macroeconomic stability when we give priority to financial sector reforms.

The capital account liberalization and financial sector development are often mutually reinforcing. The methodology for sequencing capital account liberalization involves an assessment of capital controls and macroeconomic and financial sector vulnerabilities to the liberalization, and the design of a plan (for sequencing capital account liberalization) that goes hand in hand with financial sector reforms and other policies.

While there is no simple rule for the sequencing and coordination of capital account liberalization with other policies, the following ten general principles can help guide liberalization in

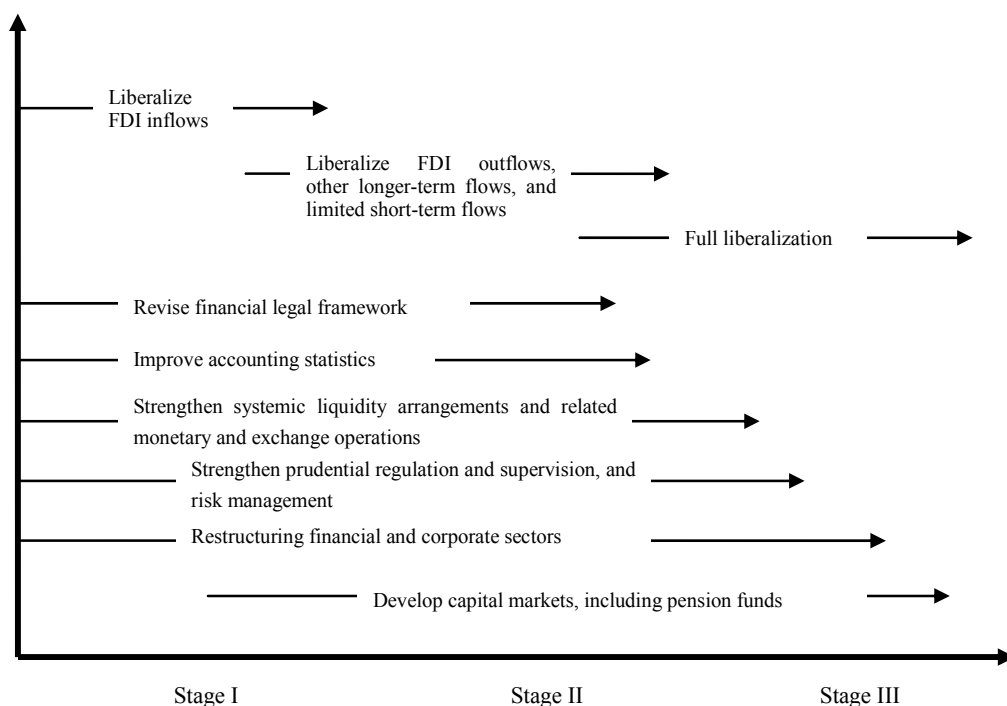
any particular case.

Ten General Principles for Sequencing

- *Lifting controls on international capital flows, and financial liberalization more generally, is best undertaken against a background of sound and sustainable macroeconomic policies.*
- *Specific financial sector reforms that support and reinforce macroeconomic stabilization should be given priority in implementation.*
- *Financial sector reforms that are operationally linked and mutually reinforcing should be implemented together.*
- *Prudential regulation and supervision and financial restructuring policies should be implemented to complement other financial reforms aimed at enhancing competitive efficiency and market development, in order to help manage risks in liberalization and foster financial sector stability.*
- *The liberalization of capital flows by instruments or sectors should be sequenced to take into account the concomitant risks. For instance, most cases point to the desirability of liberalizing long-term flows—especially FDI flows—ahead of short-term flows.*
- *The pace of reforms should take into account the conditions relating to the financial structure of non-financial corporations and other entities (for example, debt-equity ratios, foreign currency exposure) and their effects on the quality of the loan portfolios and capital base of financial institutions.*
- *Reforms that require substantial lead time for adequate technical preparations and capacity building should be started early.*
- *Reforms need to take into account the effectiveness of the controls on capital flows currently in place.*
- *The pace, timing, and sequencing of liberalization need to take account of political and regional considerations.*
- *The operational and institutional arrangements for policy transparency and data disclosure—including monetary and financial policy transparency—need to be adopted to support capital account opening.*

These principles are illustrated in figure 4-3.

Figure 4-3: A stylized representation of sequencing



Source: A Staff Team led by Shogo Ishii and Karl Habermeier, "Capital Account Liberalization and Financial Sector Stability," *IMF Occasional Paper*, No211, 2002

4-6. Deregulation of foreign exchange and capital controls for promoting the use of local currencies in foreign trade

The liberalization of foreign exchange and capital account transactions could encourage the use of local currencies in foreign trade in East Asia. The most important thing is to implement the liberalization in the ways that the benefit can be reaped from international financial and capital market access while coping with the risks associated with international capital flows. In this context, if it is difficult to reap the benefit and cope with the associated risks, the liberalization should not be a policy option. Observing the ten general principles for sequencing capital account liberalization in the previous page would be quite important.

Liberalize the capital account transactions relating to foreign trade on a step-by-step approach

It is not necessary to liberalize all the regulations on cross-border transactions for

facilitating the use of local currencies in foreign trade. What is needed is liberalizing cross-border transactions relating to foreign trade activities.

Most East Asian countries have accepted the obligations of article VIII of the IMF Agreements. Therefore, they refrain from imposing restrictions on payments and transfers of current international transactions including foreign trade. However, these countries are imposing restrictions on international capital transactions, which have contributed to financial stability in East Asia. For example, the impact of the recent global financial crisis on East Asian economy was mitigated by these restrictions than otherwise.

Although the following transactions are classified as capital account transactions, liberalizing these transactions can be effective in facilitating the use of local currencies in foreign trade. They include cross-border payments denominated in local currencies, holding of local currency accounts by non-residents with domestic or foreign financial institutions, borrowing and lending by non-residents of local currency denominated fund (permitting non-residents to access local currency denominated financial markets accounts).

However, permitting freely these transactions could give rise to currency and financial risks in the globalized financial world of today. It would be important to implement liberalization of capital account transactions relating to foreign trade on a step by step approach observing principles of the sequencing capital account liberalization. One of the most important points is that the liberalization of short term capital flows should follow the liberalization of long term capital flows. Liberalizing the abovementioned transactions would consequently liberalize the short term capital flows. Policy makers in countries imposing restrictions on long term capital flows should keep it in mind.

Further regional monetary and financial cooperation

It should be noted that the current account surpluses increased significantly in recent years and enormous foreign reserves were accumulated in East Asia. Environments surrounding domestic and cross-border financial and capital markets in East Asian countries improved significantly. External positions of East Asian countries are more sound and robust than were at the time of Asian crisis during 1997-98. Consequently, these countries are now more immune to the shocks from outside East Asia.

These changes have increased room for liberalization of foreign exchange and capital account transactions. These countries are now in a better position to tilt toward reaping the benefit of international capital market access, rather than coping with the risks associated with international capital flows.

In addition, progress in regional monetary and financial cooperation can reduce the risks of currency and financial crisis, making it easier for East Asian countries to deregulate the foreign

exchange restrictions and capital controls. For instance, the Chiang Mai Initiative, the networks of bilateral swap arrangements for the ASEAN+3 members, was established for crisis prevention in 2000. It increased its size and at the end of 2009 developed into CMIM (Multilateralised CMI) with a single contract among the thirteen countries. This can be expected to facilitate further liberalization of foreign exchange and capital transactions.

The present cooperation, however, is limited to a crisis prevention function. If the cooperation is possible not only for crisis prevention, but also for intra-regional exchange rate stability, it would be more effective in making the liberalization easier. The intra-regional exchange rate stability itself would be effective in facilitating the use of local currencies in foreign trade of East Asia, through reducing the exchange rate risks coming from using these currencies.

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Chapter 5: Policy recommendations

Based on the results of the research and study laid out in the previous chapters, this section will propose the measures to promote the use of local currencies in East Asia, after reviewing the factors guiding the recommendations.

5-1. The background

The benefits and costs of using local currencies

Promoting the use of local currencies in East Asia's trade transactions as settlement and invoice currencies would bring benefits to the region and the individual countries through the following channels. First, invoicing intra-regional trade in the regional currencies would mitigate the impact on regional trade of exchange rate fluctuations of local currencies against outside currencies (US dollar, Euro). Second, invoicing foreign trade in local currencies would increase foreign trade finance denominated in these currencies and would ease uncertainties about the availability of outside currencies used for foreign trade finance. Third, using local currencies in settlements could significantly reduce settlement risk, particularly Herstatt risk in the region.

The cost for regional countries of using a certain regional currency would have to secure sufficient liquidity of the currency. Providing liquidity of a certain country's currency to other countries requires that the country does not impose capital controls and ensures free exchange between the home currency and foreign currencies. There should be no restrictions on cross-border buying and selling of short, medium, and long-term bonds, equities, and real estates. During such times as a financial crisis when extreme shortage of liquidity occurs, the central bank would be obliged to provide sufficient liquidity to the market (through bond purchases from the markets or any other market operations).

There could also be the following benefits and costs for a country whose currency is used as an invoice and settlement currency. On the benefit side, foreign exchange rate risks faced by the country's exporters and importers could be decreased by promoting the international use of the home currency. On the cost side, since the home currency is used and traded by non-residents, domestic monetary policies and financial markets could be more susceptible to influences from abroad, and could destabilize the external value of the home currency. The cost issue would be more serious for the countries with smaller economies. One of the conditions that ensure the stability of the external value of the home currency is for the size of the domestic financial and capital markets of the country to be sufficiently larger than the size of capital inflows and outflows.

If the use of a certain currency in the region is too costly for the home country or impossible for any other reasons, a basket currency consisting of several local currencies in the

region can be used as an invoice currency and a settlement currency. For a further study on a basket currency, see Ito, Takatoshi (2007) ²¹.

This research examined various ways to promote the use of local currencies based on the principle of maximizing the benefits of the use while minimizing the costs.

Promoting the use of local currencies and the growth and stability of the East Asian economy

As the use of local currencies as invoice currencies and settlement currencies in the region would decrease the foreign exchange rate risks faced by the exporters and importers in the region, it would contribute to more stable growth of intra-regional trade. In turn, the growth of intra-regional trade in East Asia would strengthen ties among the economies in the region, increasing the need to stabilize intra-regional exchange rates. Intra-regional exchange rate stability could facilitate the use of local currencies for invoicing and settlement in intra-regional trade. Thus, the use of local currencies in the region and the development of the regional economy would reinforce each other.

Is it possible to facilitate the development of a regional economy and promote the use of local currencies in the region without any complementary policy initiative? Or are there any instances where some policy initiatives are desirable for promoting the use of local currencies in the region?

The choice of invoice and settlement currencies is affected by historical and institutional factors. Where the US dollar has been used so far, it will continue to be used as long as the transaction costs of other currencies do not become lower than those of the US dollar. In addition, an exporter/importer using the US dollar would benefit from the economies of scale in managing foreign exchange risks as long as other exporters/importers continue to use the US dollar. Thus, currency choice is like language choice. The value of the use increases if others continue to use it. The more a currency is used, the less its transaction cost is, and vice versa. This is a self-fulfilling aspect of currency choice. Therefore, if the choice of a local currency is desirable in the long run, it is logical to promote the use of it in the short run in order to break through the current second best state (called coordination failure) due to this self-fulfilling nature (see Ito (2007)).

As there is currently an overwhelming use of the US dollar and there is an inertia effect in changing the currency to be used, the measures to promote the use of local currencies may not have an immediate effect. However, if the use of local currencies should become as convenient as the use of the US dollar in the near future, it would be important to promote the use of local currencies aggressively. The recommended measures are also expected to contribute to the growth and stability of East Asia, and important in the medium-term.

The promotion of the use of local currencies has a mutually reinforcing relationship with

²¹ Ito, Takatoshi (2007), *A Basket Currency for Asia*, Routledge, Pub., London, UK, 2007 xix+204 pages.

the promotion of the growth and stability of East Asia, and can also be regarded as a policy for facilitating the economic and financial integration of the region. Therefore, the use of local currencies should be promoted first in intra-regional trade, and then in the trade with extra-region.

Which currency should be promoted for use?

There is a view that it is inefficient to try to promote the use of all local currencies in the region. It is true that international transactions are more efficient when there are fewer currencies involved, due to the mechanism of network externalities and other factors. At the same time, an increase in the number of currencies would contribute to risk diversification. The balance between these two considerations should be taken into account in deciding the number of currencies that should be promoted for use in East Asia.

Currently, only a limited number of East Asian currencies are fully convertible. The measures to promote the use of local currencies stipulated in this section do not necessarily bring about the increase in the use of currencies that are currently fully convertible. However, they will surely contribute to the growth and stability of the region. Under these circumstances, the priority at this stage should be given to the individual countries implementing the measures that are recommended and not to trying to figure out which currency/currencies should be promoted for use. It would also be wise to explore ways to use the East Asian currencies that currently have full convertibility in intra-regional transactions.

Currency denomination of foreign trade transactions conducted by Japanese companies

The use of the yen in Japan's foreign trade transactions is less than that of the US dollar, which is a third-country currency, for the trade with other Asian countries. This reflects the fact that Japanese exporting companies tend to choose the currency in accordance with the pricing-to-market behavior and that a large share of goods is ultimately destined to the US through production sites in Asia. The high cost of hedging foreign exchange risks of Asian currencies vis-à-vis the yen is also pointed out as a factor impeding the use of local currencies (Japanese yen and the currencies of Japan's trading partner countries in Asia) by Japanese companies in intra-regional trade. Our study showed that this factor is statistically significant. Measures to reduce transaction costs of local currencies in the region must be in the policy proposal.

The necessity to improve data and statistics

Countries in East Asia should improve the quality and management of data and statistics on currency choice in foreign trade and make them more readily available. Only a few countries currently release foreign trade statistics by currency, and the available statistics do not cover the whole of East Asia. Data and statistics on the use of currencies in the region are indispensable to find

ways to promote the use of local currencies, but such information is in short supply. As a part of this study, a survey was conducted to gather data from corporations to compensate for the shortage of information. The acute need to improve statistical data on currency choices within the various aspects of the overall economy cannot be emphasized enough.

5-2. Measures to promote the use of local currencies for foreign trade in East Asia

Against the above background, this paper proposes the following measures to promote the use of local currencies for foreign trade in East Asia.

5-2-1. Measures in the financial area

There are cases in which economic agents dealing with foreign trade are unable to use local currencies or the use of these currencies is against the interest of economic agents themselves, even if they want to use local currencies for reducing the risks.

What are the underlying causes? First, there are various regulations imposed on policy grounds and institutional restrictions in many countries. Second, the local currencies in the region may not be widely used because they are not sufficiently convenient. For example, the transaction costs of these currencies are high in private transactions.

Based on this understanding, following are the recommended measures to be taken in the financial area. They also serve as the means to promote financial integration in East Asia. These would promote arbitrage transactions between financial markets in these countries and the global market, and raise the efficiency of financial markets in the region. They are worth implementing even putting aside the purpose of promoting the use of local currencies in the region.

Deregulating foreign exchange and capital controls while taking the sequencing of deregulation into full consideration

Foreign exchange and capital controls could be constraining the use of local currencies in foreign trade. Deregulating such restrictions could contribute to establishing the ideal environment for promoting the use of local currencies. However, if deregulation is conducted in a wrong sequence, it could destabilize the foreign exchange, domestic finance, and capital markets by increasing the opportunities for currency speculation by non-residents. Easing the regulations on domestic financial systems should precede the deregulation of foreign exchange and capital controls. Such sequencing is vital in the process of deregulation. Since the situation differs from country to country, it is not possible to generalize and have one methodology for deregulation. However, deregulation of foreign exchange and capital controls should be conducted with the appreciation for the importance of sequencing.

It is not necessary to eliminate all the regulations on cross-border transactions in order to

promote the use of local currencies in foreign trade transactions. Deregulating some of the rules would be enough. Government should take a step by step approach in deregulating the use of their home currencies by non-residents for foreign trade transactions, while closely monitoring the risks associated with them.

If the spot market and the forward market of the home currency develop adequately as a result of more active cross-border arbitrage transactions due to deregulation, that would have the effect of promoting the use of the home currency in trade transactions by lowering the transaction costs including the hedging cost against foreign exchange risks.²² Such arbitrage transactions are short-term capital movements. In view of the principle of the sequencing of deregulation, it is preferable to deregulate long-term capital movements ahead of short-term capital movements.

These points should be considered in implementing deregulation. Deregulation is one of the several factors affecting the currency choice. Deregulation alone may not have much impact on promoting the use of home currencies in foreign trade transactions. Even if that were the situation, there is great benefit in deregulating foreign exchange and capital controls, as deregulation strengthens the means to deal flexibly with risks associated with trade transactions.

Improving foreign trade finance denominated in local currencies as well as foreign exchange, financial and capital markets of individual countries in East Asia

Encouraging foreign trade finance denominated in local currencies will promote the use of those currencies in foreign trade transactions. That is why foreign exchange and financial markets of the local economies must be developed and improved. If liberalization of capital control were added on top of such improvements, arbitrage transactions among these markets would be enhanced, and the increase of foreign exchange and financial transactions would lower the transaction costs (such as the spreads of cross-exchange rates among local currencies in East Asia²³) through economies of scale. Then foreign trade finance denominated in local currencies would be more accessible, convenient, and beneficial.

Measures to further develop regional capital markets such as the Asian Bond Markets Initiative (ABMI), Asian Bond Fund (ABF), and CGIF (Credit Guarantee and Investment Facility) contribute to lowering the transaction costs of local currencies by increasing bond transactions denominated in these currencies. If the ratio of bonds denominated in local currencies (Asian bonds) should increase in the portfolio of regional investors, it would deepen the markets. In turn, deeper markets would contribute to stabilizing cross exchange rates among local currencies and shrinking the spreads of cross exchange rates. If such developments should lead to sounder and more

²² The result of the regression analysis (Appendix 2-2) shows that the high costs of forward exchange rate spreads of Asian currencies against the Yen are (statistically-significant) negatively affecting the transactions denominated in local currencies in Asia.

²³ See the previous footnote.

competitive regional financial institutions and corporations, there would be further room for deregulating foreign exchange and capital controls.

The Plan to create Asian Local Currency Exchange Support Fund, providing long-term local currency and interest rate derivatives in Asian currencies, will promote long-term local currency financing for borrowers in Asian countries. Like ABMI, it will contribute not only to the development of local currency capital markets, but also to the deepening and maturing of local currency foreign exchange markets.

Looking back at the experience of the EU, an explosive increase in intra-regional cross-border portfolio investment together with the stabilization of intra-regional foreign exchange rates due to the European Monetary System (EMS) lowered the spreads of cross-foreign exchange rates among European currencies (transaction costs). The lower spreads helped the West German mark to replace the US dollar as the vehicle currency in foreign exchange transactions among European currencies in the 1980s. In Asia, the financial and capital markets are still much more integrated with the markets outside of Asia (those of the developed countries) than with the regional ones, so it is rather difficult to assume that the vehicle currency in foreign exchange transactions among Asian currencies would change from the US dollar to some local currency in the near future. The financial and capital markets in the region are certain to become more important in the future, due to an increase in asset accumulation, the higher level of income, and the increasing need to provide for pension and trust funds because of the aging population in East Asia. Therefore, it would benefit the residents of each country in the region if regional financial integration were pursued through the development and improvement of regional financial and capital markets. This would be a critically important policy agenda.

Improve foreign exchange settlement system in Asia

In order to make Asian currency markets safer and more efficient, a wide spread adoption of CLS (Continuous Linked Settlement), providing multi-currency cash settlement system, in Asia is essential. In addition to Bank of Japan, Bank of Korea, Hong Kong Monetary Authority and Monetary Authority of Singapore, other Asian central banks are urged to become CLS member countries in order to eliminate the foreign exchange settlement risks in Asian currencies. Moreover, creating an Asian-wide cross-border RTGS system would be an essential step for more efficient transactions of foreign currencies, which can help mitigate settlement risk in inter-bank FX trades and promote more active FX transaction in Asian markets. An early push toward the region-wide cross-border RTGS system will be recommended.

Regional monetary and financial cooperation

The Chiang Mai Initiative Multilateralisation (CMIM), which is an effort to prevent a

financial crisis, could contribute to the promotion of the use of local currencies in East Asian trade. Lowering the crisis risk would make it easier for the member countries to deregulate foreign exchange and capital controls. Pooling the foreign exchange reserves of the region would reduce the minimum size of reserves deemed necessary for each individual country to avoid a crisis. This would expand the scope for policy actions to support and stimulate domestic demand which would have the effect of shrinking the current account surplus and foreign reserves, leading to more intra-regional trade ultimately destined within the region instead of outside.

At the same time, pursuing the possibility of cooperation to stabilize the foreign exchange rates among local currencies in the region will lower the risk of using local currencies in regional trade, and will contribute to the lowering of the spreads of cross-foreign exchange rates among local currencies, which reflect the intra-regional exchange rate volatilities. In pursuing the ways for this cooperation, it is important to note that there are differences in the degree of flexibility among the foreign exchange regimes of East Asian countries.

5-2-2. Measures from the aspect of the real economy

As discussed above, the measures to be taken in the financial areas and those from the aspect of the real economy can mutually reinforce. If a virtuous cycle could be created between the developments in both areas, there would be further improvement in the environment to promote the use of local currencies.

Expanding regional trade and regional demand

Expanding trade by eliminating tariff and non-tariff barriers to regional trade is highly desirable. Increases in regional trade and the promotion of the use of local currencies could enhance each other. Advancing the FTA/EPA among the economies and pursuing a regional FTA by integrating individual FTAs/EPAs will promote the use of local currencies, which in turn will increase regional trade. However, the increase of regional trade in which the final destination is outside the region would not necessarily help to increase the use of local currencies. If regional economic development increases regional trade in which the final destination is within the region, it would promote the use of local currencies.

Increasing domestic demand in Asia is effective in expanding regional trade in which the final destination is within the region. East Asia has a huge current account surplus, though the situation varies from country to country, and must have a strategic framework to increase domestic demand through structural and cyclical policies. This would mean supporting the growth of the regional economy not only as a production site but also as a consumer market.

Strengthening the competitiveness of regional industries

As the goods that are internationally competitive tend to be invoiced in exporters' currencies, strengthening the international competitiveness of the regional industries will especially promote the use of local currencies in extra-regional exports. The key elements to enhance competitiveness are further strengthening the production networks in East Asia established through foreign direct investment and trade, improving infrastructure, deregulating intra-regional cross-border and domestic transactions, and harmonizing various economic systems among regional economies. Therefore, efforts to create a region-wide FTA and to further improve the existing FTA/EPA arrangements are desirable from this view point as well.

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