

# The International Role of the Euro - A Comparison with the Deutsche Mark -

**TANAKA Soko**

**Professor, Chuo University; Chairman,  
European Union Studies Association - Japan (EUSA-Japan);  
Vice Chairman, Japan Center for International Economics (JSIE)**

## Introduction

The Euro has been faced with a lot of internal challenges in the 21<sup>st</sup> century mainly due to divergent economic developments in the 12 member countries. For example, the monetary of the ECB has been criticized. Several experts, like Ahearne & Pisani-Ferry (2006), said that the monetary policy of the ECB had been so tight that the core big countries of the Euro area had fallen into an economic stagnation during 2001-2005. The other experts, like Belke/Gros (2006), say that the monetary policy of the ECB has been so loose that housing price in Spain, France and Italy has been steeply rising and the bubble would burst in the near future.

Such internal aspects of the Euro are out of the question of this paper. What is picked up in this paper is the international role of the Euro.

One big issue in this field is contemporary situation and a prospect of the Euro as an international currency. Many people referred to the dollar-euro bipolar international monetary system. Will the Euro be the challenger to the US dollar?

The other big issue is the role of the Euro as the regional international currency. The main object of a common European currency was originally to defend Europe from volatile forex movements of the US dollar. Since the end of 1960s, Europe suffered from the swings of the international capital movements which induced the dollar-mark polarisation and turmoil on the European forex markets. The European monetary integration started in pursuit of "independence from the dollar's dominance in Europe" in the 1970s. In the successful process of the EMS (European Monetary System), the Deutsche Mark became the regional international currency around 1990 in Western Europe. What kind of international currency was the Deutsche Mark?

The Euro is now the regional international currency in Europe. But the Euro inherited not so much the role of the D-Mark as the regional international currency. The Euro is a regional currency of different type from the D-Mark. What kind of roles is the Euro playing in Europe?

There are two kinds of functions in an international currency: invoicing/settlements function and international asset currency function. The present paper offers a prospect that the international monetary system will return to the single dollar system which will be instable, if we look at invoicing/ settlement function in the global context. There will be opportunities, however, that the Euro threatens the US dollar, if we look at the international asset currency field.

In Section 1, we will see what functions an international currency or the vehicle currency has. In Section 2, we will investigate how the D-Mark became the vehicle currency on European spot forex markets and what role the DM played in the global context as the European vehicle currency. In Section 3, we will explain how the Euro is playing roles as an international currency in Europe as well as in the global context. In Concluding Remarks, we will conclude in brief.

## 1. International Currency

### 1.1. What is an international currency?

Magee and Rao (1990) defined two types of currencies in the pricing of internationally traded goods; vehicle and non-vehicle currencies. Non-vehicle currency pricing occurs when the currency of an exporter or importer is used; vehicle currency pricing occurs when a third currency is used. Non-vehicle currencies are divided into three groups: major, symmetric and minor currencies [1].

An international currency in a traditional sense of the word means a vehicle currency in international trade, namely trade vehicle currency. It not only invoices, but also settles trades between other two countries.

There is another vehicle currency role in interbank transactions, too. For example, commercial banks in Japan or Europe choose a common vehicle currency, the US dollar, within the interbank foreign exchange markets to minimize the cost of transacting.

Any international currency serves two important functions: unit of account and medium of exchange. As we can distinguish three types of economic agents (trader, bank and monetary authority), we can identify six different functions for an international currency classified by the type of transactions and the functions of the currency [2]. An international currency serves another important function, though it is not necessarily related with vehicle: store of value. Various kinds of international investors make use of an international currency as an international asset currency or international investment /procurement currency. If we include this function, we get Table 1.

Table 1 Functions of an international currency

Function Agents	Unit of account	Medium of exchange	Store of value
Trader  Int'l investor	Invoicing	Settlements (trade vehicle)	Investment /procurement
Banks	Numeraire of currencies	Foreign exchange vehicle	Lending
Authority	Peg, anchor	Intervention	Reserve

Of these functions, foreign exchange (forex) vehicle function is likely the most important. Normally, commercial banks of all the countries centralize their bank deposits, which they hold in various currencies at their correspondent banks all over the world, into their dollar accounts in NY as working capital so as to minimize their transaction costs. In case of the dollar, the bank deposits are called "New York balance." The commercial banks always change their dollar deposits into/from other currencies. The "New York balance" is used to settle international transactions, say, between Japan and Australia etc. So the "balance" is the international currency itself.

As the transaction volume of the dollar is the biggest in many countries, the monetary authorities in the countries is able to intervene most effectively against the US dollar. So they hold their forex reserves in the US dollar. If needed, they peg their own currency to the dollar, the forex vehicle currency. Therefore, the forex vehicle currency is likely to be used by the monetary authorities as the official international currency.

### 1.2. Bipolar or Multipolar System

There were almost always one dominant international currency and other international currencies of different importance in unison in the world. Before the First World War, the Mark and French Franc were regional international currencies under the worldwide sterling system. Between the two world wars, the US dollar challenged the pound sterling, the dominant international currency, unsuccessfully. After the Second World War, the dollar became the dominant international currency, but the sterling dominated until the beginning of the 1970s in the sterling zone as the regional international currency.

The forex transaction costs are decisive to explain such bipolar or multipolar relationship. The forex transaction costs, expressed as the bid-ask spread, is in general proportional to the volatility of the currency pair traded and inversely proportional to the volume transacted. High exchange rate volatility widens bid-ask spread, since by so-doing forex dealers want to evade losses arising from the volatile rate fluctuations. The larger the trading volume of the currency pair is, the smaller the bid-ask spread becomes because the forex dealers can find counterparts so much easier. Transaction costs of currency exchange thus decrease with trading volume

(thick-market externality) and will always increase with exchange rate volatility of the currency pair traded [3].

Assume that the country A stays outside the bipolar zones and the currency is exchanged directly with both of the vehicles X and Z. If transaction costs become bigger enough due to rising volatility vis-à-vis the currency X than vis-à-vis the currency Z, the dealers may abandon the currency X market. Then, the currency A becomes to belong to the currency zone Z. Conversely, a group of currencies can get out of the currency zone and organize a new zone. In this case, the related dealers need setup costs of opening inactive markets. The setup costs give the incumbent dominant vehicle currency a considerable competitive advantage over its potential rivals. Low transaction costs and setup costs generate inertia: there is little incentive for an individual agent to deviate and use another vehicle currency, unless everybody else decides to do the same.

## 2. Changeover of the Vehicle Currency in Europe - from the US\$ to the D-Mark -

### 2.1. Lowering Transaction Costs of the DM on the Western European Foreign Exchange Markets

After the transition to the floating exchange rate regime in 1973, Western Europe could not avoid recurrent currency turmoil. It was typically accompanied by a Dollar-Deutschemark swing and a polarization among the European currencies. The polarization compelled the "currency snake" of the 1970's to break apart to the small D-Mark zone (the "mini snake"). As the US dollar was the only forex vehicle currency in Europe, commercial banks in Europe were obliged to use the dollar as their forex vehicle, so did the European central banks intervene on their forex markets with the dollar. Europe depended on the dollar almost totally until the middle 1980's.

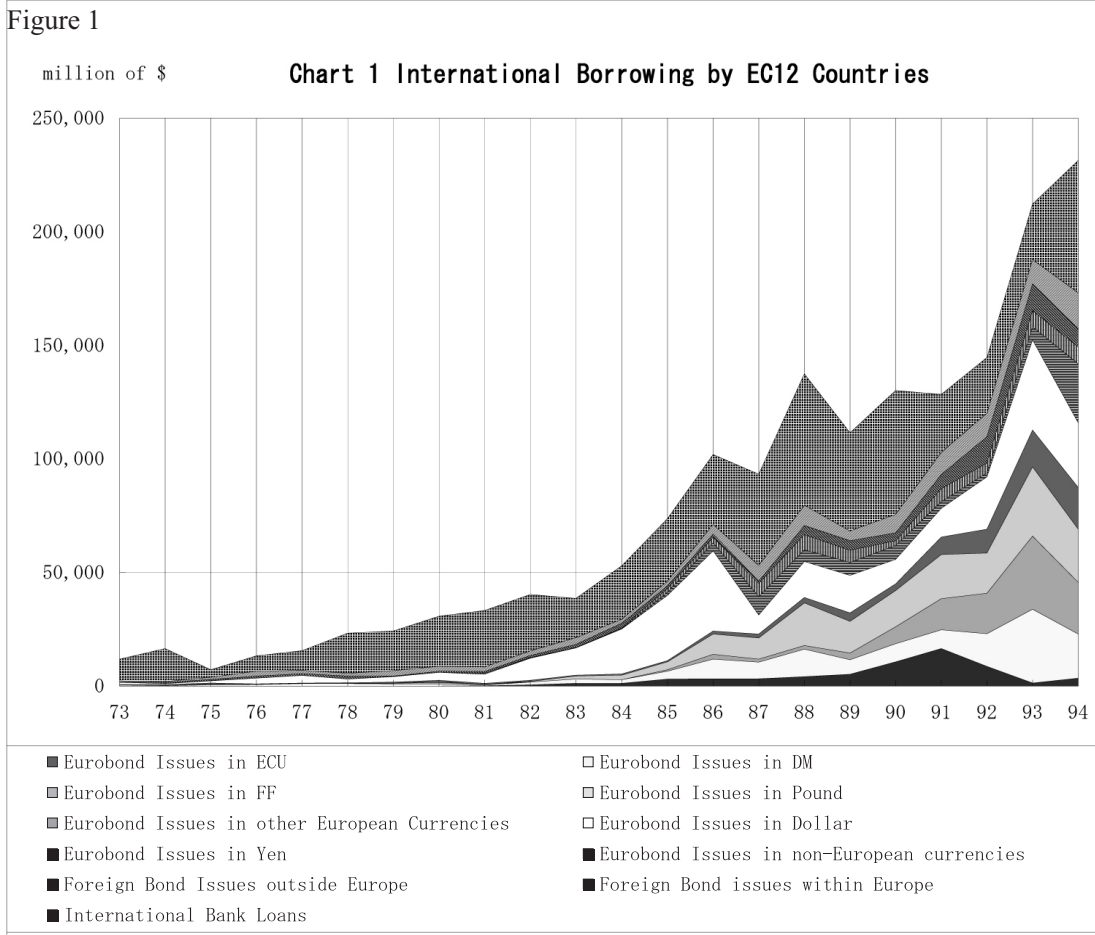
But the D-mark eroded the vehicle role of the dollar in Europe at last and became the forex vehicle currency on spot markets there around 1990 [4]. The changeover of the vehicle currency depends mainly on transaction costs. The European Monetary System guaranteed the much lower volatility between the D-Mark, the nominal anchor of the EMS, and other EMS currencies than between these currencies and the dollar from the latter half of the 1980's on. As there were no realignments in the EMS for more than five years from February 1987 to August 1992, the volatility became very low among the EMS currencies. On the other hand, the dollar depreciated drastically with high volatility against the European currencies after the Plaza Accord of 1985. This accentuated the low volatility between the DM and other EMS currencies.

In the same period, the trade volume of the D-Mark rose tremendously on the forex markets in the world. Between and 1992, the daily transaction turnover of the DM rose by 87% from \$247 billion in 1989 to \$461 billion in 1992. The dollar rose by 11% and the yen only by 1%. On the interbank spot markets, the turnover of the DM became 77% as high as the dollar. The inflows of portfolio investments into Europe (especially into high-interest peripheral countries) at the beginning of the 1990's were mostly predicated on continued, rapid convergence of economic and financial performance among EMS countries. As the D-Mark was used as a representative hedging currency in the transactions between the other currency pairs, its transaction volume rose so remarkably. As the Figure 1 shows, the liberalization of capital control in the process of the completing the EC internal market rose crossborder capital transactions in the EC after the latter half of the 1980s, too.

Let us explain the steep rise in the crossborder transactions of financial securities in Europe after the latter half of the 1980s. At the European Council held in June 1988, the EU governments agreed to liberalize capital transfer until 1990 (for the core countries) and 1992 & 1994 (for the peripheral countries) as a process of completing the internal market, Issues of securities denominated in the dollar diminished on the offshore markets after 1987, as shown in Figure 1. Instead, the issues in EC currencies (not only the DM, FF and the sterling, but the ECU and other European currencies in lesser extent) rose year after year and relegated the dollar. Most of the issuers denominated bonds in their own national currency so as to evade foreign exchange risks. Issuing currencies diversified into various European currencies, as Figure 1 shows.

In parallel with the Eurobond markets shown in Figure 1, the new form of international capital flows developed rapidly in the EC in the second half of the 1980's.. It is foreign transactions in domestic bonds, namely crossborder dealings in bonds (mainly government bonds) by institutional investors located in various European countries[5]. The expansion of aggregate capital transactions (sum of all crossborder transactions) was remarkable after 1985. The institutional investors bought and sold the securities very actively. The

transaction volume rose steeply after 1992 due to the financing demands of the German government after the reunification and to the investment boom.



Source: Iwata (1996), p.4. [Original data: OECD, International Financial Markets, various issues]

The expansion of cross-border securities transactions took place in the same period all over Europe. For example, the aggregate turnover in the Netherlands rose 369 billion guilder in 1987 to 1,297 billion guilder in 1993. The inflow of foreign capital into Spain was 719 billion peseta in 1986, 1,999 billion peseta in 1990 and 2,978 billion peseta in 1991 [5]. G10 report (1993) says that "after 1986, securities markets tended to be the locus of dynamic change. The focus of modernization shifted to domestic markets, which rapidly began to emulate the high level of innovation that had been achieved in the offshore market, thereby greatly advancing the average level of financial sophistication throughout the OECD area and making it possible to link national markets into an increasingly integrated system [6]".

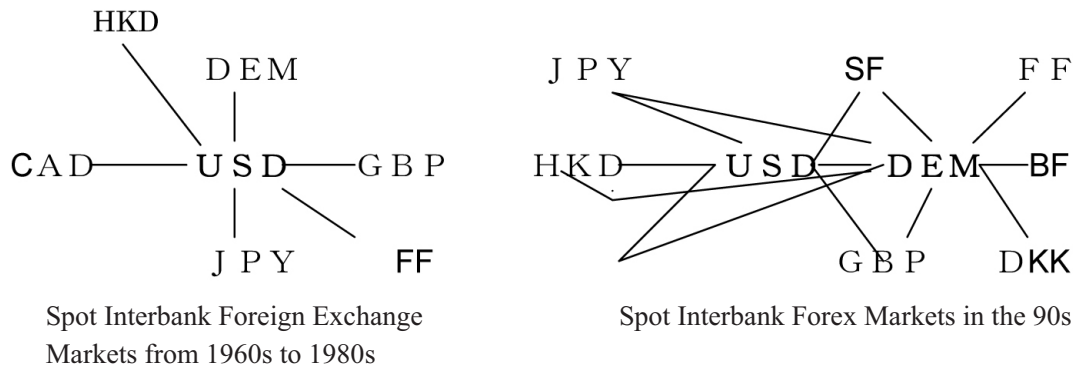
In such a tide of the worldwide financial innovations and structural change, Europe tended into a financial zone, where European investors were main players. According to the Bundesbank, EC12 accounts for 71% of the purchases and 74% of the sales on the German securities market in the year of 1986-1990 [7]. In this way, the European Financial Zone was formed. The D-Mark was utilized as the most useful hedging currency all over the European forex markets. It supported the DM to become the vehicle currency of Europe. Therefore, the European Monetary and Financial Zone was not only a product of the Germans, but much more a product of the unconscious cooperation of the European monetary and financial world.

## 2.2. Changeover of the Vehicle to the DM

Both the low volatility of the D-Mark vis-à-vis the other EMS currencies and the high volume of transactions of the DM made the transaction costs of the DM and the European currencies lower than using the

dollar as the vehicle. The dealers switched their vehicle currency from the dollar to the DM around 1990. Not only the European commercial banks but also Japanese banks began stationing such forex dealers at their London affiliates in 1989-1990. This means that the changeover paid the setup costs. In turn, the changeover raised the trade volume of the DM further not only inside but also outside of Europe. For example, the direct yen/DM trading on the Tokyo spot market began at the beginning of the 1990's, though traditional "dollar against DM" transactions remain. Even in New York forex market, forex dealers used, for example, the DM/FF rate as the numeraire when they dealt with \$/FF.

Figure 2 Changeover of the Vehicle Currency in Europe



### 2.3. Frankfurt Balance and the Key Currency Role of the DM in the EMS

The role of the DM as the vehicle currency implies rising international banks' and non-banks' holdings of the DM. "It is, rather than reflecting risk aversion, international holdings of marks, particularly bank deposits, may result from nothing more than the close substitutability of the mark with other European currencies and the ease with which it can be transformed into any one of them." The mark is also an interbank vehicle for almost all trading among Continental currencies. When a bank exchanges a customer's French francs for Italian lira, it will typically transact a pair of exchanges in the interbank market: marks against lira and francs against marks. Of an estimated \$150 billion of transactions among EU currencies in April 1995, the mark was on one side of the transaction in over \$140 billion. Under these conditions, a European corporate treasury trying to minimize its transactions costs while reducing its working capital would centralize its bank deposits in European currencies in mark accounts [8]." The banks held bank deposits in the DM ("Frankfurt balance") as working capital and change the deposit into/from other European currencies. This reduces transaction costs of the DM holders.

The DM became the intervention and reserve currency of the EMS countries. The amount of the foreign exchange market intervention by EMS currencies (mainly the DM) superseded the dollar for the first time in 1986-87[9]. The intervention using the DM (selling the DM to buy own currency) has an effect to mitigate the polarization and to stabilize the exchange rates in the EMS. Europe became more independent from the dollar. However, the dollar has been overwhelmingly superior to the D-mark on the swap market. The swap market is funds market. The liquidity, breadth and the depth of the dollar market have been second to none.

### 2.4. Effects of the Changeover in the Vehicle Currency in Europe

The European vehicle currency brought more stable forex markets in Europe than during the days when the dollar was the sole vehicle currency in Europe. When the EMS crisis happened in September 1992, the pound sterling and the Italian lira were obliged to get out of the EMS. But the EMS could outlive the storm. If the dollar had been the vehicle currency in Europe as in the 1980s, the EMS crisis would have been much more serious, because the dollar intermediated every forex transaction in the EMS countries. As the D-Mark became the vehicle currency, the speculators like the American hedge funds attacked the French Franc, for example, by buying the D-Mark. The EMS central banks defended the French Franc by selling the D-Mark. The Deutsche Bundesbank could supply the DM without limit. If they would have had intervened by the dollar, they would have had to face the limit of their dollar reserves and the EMS might have broken apart.

## 2.5. Features of the D-Mark Zone

The D-Mark became the international currency in Europe. There are several features of the D-Mark zone.

1. The D-Mark was the international currency only in Europe: the regional international currency.
2. The D-Mark became the international currency in the second and the third dimension in Table 1: the interbank level and the monetary authority level. In the first dimension (traders and international investors), the D-Mark did not change its international role essentially after it became the international currency. For the D-Mark, the internationalization ratio, the total exports in the world invoiced in a currency divided by the total exports of the country issuing the currency, was 1.4 and did not change between 1980 and 1995 for the D-Mark (Table 2). About 75 -80% of the German exports and about 50% of the German imports was invoiced in the D-Mark, the ratio 1.4 was almost explainable by the German trade. Central European countries may have invoiced their trade in the D-Mark, but the turnover must have been trivial. According to the Table 2, France, Italy and the Netherlands strengthened their home bias between 1980 and 1995. Here we cannot see any influence of the D-Mark becoming the international currency. Although the international ratio of the dollar decreased from 4.5 in 1980 to 3.9 in 1995, the dollar was used as the trade vehicle currency broadly. The dollar has been the full-fledged international currency. In comparison, the D-Mark was an international currency mainly in the forex vehicle function and on the official level.

Table 2 Share of the main currencies in invoicing in the world trade

	1980		1995	
	Share(1)	Int. Ratio	Share(1)	Int. Ratio
USD	56.4	4.5	52.0	3.9
DEM	13.6	1.4	13.2	1.4
FRF	6.2	0.9	5.5	1.0
GBP	6.5	1.1	5.4	1.1
ITL	2.2	0.5	3.3	0.8
NLG	2.6	0.7	2.8	0.9
JPY	2.1	0.3	4.7	0.6

[Note] 1. Share(1) stands for the share of each currency in invoicing in the world trade.

2. Int. Ratio stands for the Internationalization ratio.

[Source] Bekx (1998), p.8, Table 3. The original source from the European Commission DGII, D4.

3. The home bias was very strong in the international bond issues in Europe. The turnover of the issues was comparable among the DM, FF and the British Pound in the latter half of the 1980s and the first half of the 1990s as is shown in Figure 1. The DM was not a sole, nor a main international procurement currency in Europe. It was one of the main procurement currencies there.
4. In the process of changeover the vehicle currency in Europe, the turnover of the dollar decreased from 90.0% to 82.0% and the D-Mark rose from 27.0 to 39.6% (12.6% points), while the other EMS currencies also increased from 6.0% to 15.6% (9.6% points) as is shown in Table 4 below.
5. The UK did not become a member of the D-Mark zone, but remain in the dollar zone. As the biggest international financial center in the world, the UK transacted the dollar and the D-Mark, but the turnover of the dollar transactions on London forex market the turnover of the sterling/dollar transactions in the world were much bigger than that of the D-Mark and of the sterling/mark transactions.
6. The D-Mark zone was a forex vehicle zone, but not a trade vehicle zone. The D-Mark was neither the most important, nor the single international procurement currency in Europe. As an international currency, the dollar has been fully-fledged, but the D-mark was not.

## 3. The Euro as the Regional International Currency

### 3.1. The Euro Area and the Euro Zone

The D-Mark zone was dissolved into the Euro area, where the Euro circulates as the legal tender. The

international economic relations inside the D-Mark zone were fundamentally transformed into "domestic" economic relations based on the Euro and the ECB (or the Eurosystem). Surrounding the Euro area, there is the Euro zone where the Euro serves as the international currency.

The ECB made a table showing the "countries with exchange rate regime linked to the euro", in which 50 countries are listed but six countries of which are based on various kinds of basket currency standards so that they might be excluded from the Euro zone (Table 3). The eight countries of the remaining 44 countries (including two French territorial communities) adopt the euroisation regime. The euroization phenomenon shows very strong influence of the Euro in peripheral Europe, but these countries are so tiny that they have almost no importance economically anyway. The remaining Euro-zone countries are the two "pre-Ins" countries (Sweden and Denmark), CEECs, West Balkan countries, Mediterranean and African countries. All of these countries belong to the Euro Time Zone (ETZ). The Euro area is comparable in the economic scale (GDP) to the USA, but the Euro zone is economically quite different from the D-Mark zone.

Table 3 Countries with exchange rate regimes linked to the euro

Exchange rate regimes		Number of Countries	Countries
Euroisation	①Official Euroisation	5 (include 2 French territorial communities)	Mayotte (EU Council Decision No.99/95/ EC) , Saint-Pierre-et Miquelon (EU Council Decision No.99/95/EC) , Monaco (EU Council Decision No. 99/96/EC) , San Marino (EU Council Decision No.99/ 97/EC) , Vatican City State (EU Council Decision No.99/98/EC) .
	②Unilateral euroisation	3	Andorra, Kosovo, Montenegro
Euro-based currency boards		2	Bulgaria, Bosnia and Herzegovina
Peg arrangements based on the euro	①the euro	27 (include 3 French overseas territories)	Cyprus, Denmark, Estonia, Latvia, Lithuania, Malta, Slovenia (ERM II) . Hungary (unilateral shadowing to ERM II) . CFA Franc Zone. Cape Verde, Comoros. French Polynesia, New Caledonia, Wallis and Futuna.
	③currency basket involving the euro	5	<u>Morocco, Seychelles, Vanuatu, Israel, Botswana.</u> <u>Russian Federation (share of the euro: 35%),</u>
Managed floating with the euro as reference currency		8	Czech Republic, Croatia, Slovakia, Romania, FYR Macedonia, Serbia, Tunisia.

[Memory item]: Independent floating Sweden, United Kingdom, Poland, Turkey, Albania.

CFA Franc Zone: WAEMU (Benin, Burkina Faso, Cote d'Ivoire, Guinea-Bissau, Mali, Niger, Senegal, Togo) and CAEMC (Cameroon, Central African Republic, Chad, Republic of Congo, Equatorial Guinea, Gabon).

Exchange rate regimes of Morocco, Seychelles, Vanuatu, Israel, Botswana and Russian Federation are not link only to the euro.

[Sources] ECB (2005), p.52 Table 18 & National central banks.

Before the introduction of the Euro, there were opposite opinions about the functions of the Euro as an international currency. According to Portes/Rey (1998, p.308) , "given the euro's fundamentals - the EU's economic size, the liberalization and integration of its financial markets, and confidence in its international creditors status and stability-oriented monetary policy - we find that the most likely outcome is that the dollar will have to share the number-one position" with the Euro. In contrast, McCauley (1997) foretold , based on the

analysis of the turnover trend of the European forex markets, that the forex vehicle role of the Euro would be inferior to the D-Mark. I agreed to McCauley (Tanaka:1998).

### 3.2. Turnover of the Forex Transaction of the Euro

As the D-Mark zone was dissolved with the birth of the Euro, the turnover of the foreign exchange transactions of the Euro became much less than that of the legacy currencies altogether. The share of the Euro had been 37.6% in April 2001 and did not change in 2004. It was larger than the D-Mark's share in 1998 (30.1%), but was much smaller than the EMS total (52.5%)(see Table 4). In contrast, the share of the dollar recovered to 90.4% in 2001. The share is as high as that in 1989 when the D-Mark did not get the position of the European forex vehicle. The dollar became the counterparts in about 90% of all the forex transactions in the world. This shows that the changeover from the D-Mark to the Euro caused the relative weakening of the forex vehicle function. In 2004, the share of the dollar decreased somewhat, but it happened due to the rising share of the pound sterling ,not due to the Euro.

Table 4 Currency distribution of forex market turnover  
(Percentage shares of average daily turnover in April)

	1989	1992	1995	1998	2001	2004
USD	90.0	82.0	83.3	87.3	90.4	88.7
Euro	-		-	-	37.6	37.2
D-Mark	27.0	39.6	36.1	30.1	-	-
EMS total	33.0	55.2	59.7	52.5	-	-
JPY	27.0	23.4	24.1	20.2	22.7	20.3
Pound St.	15.0	13.6	9.4	11.0	13.2	16.9
All currencies	200.0	200.0	200.0	200.0	200.0	200.0

[Note] 1. "EMS total"=D-Mark + the other EMS currencies + ECU.

2. The percentage of "All currencies" becomes 200.0, because, for example, direct USD/euro volume is counted twice, once in USD volume and once in euro volume.

[Source] BIS (2002), p.9 & BIS (2005), p.9.

Let us look at the worldwide turnover by currency pairs in the traditional foreign exchange markets (spot, outright forward and swap transactions) and spot transactions (Table 5). As the dollar has been overwhelmingly strong in swap markets, the turnover shares of the spot transactions is shown separately. Some features which interest us are as follows: (1) The Euro inherited the Mark's shares against the JPY, SF, but the sterling/dollar transactions grew at the expense of the euro/sterling [10]. (2) The vehicle function of the dollar seems to have been strengthened, since the share of the dollar/other transactions grew from 18% to 25%. (3) The transaction volume of the Euro zone countries was very small. The share total of the five CECs was only 0.7% in 2001, while the share of Denmark was 1.4%. The share of the 11 EMS countries excluding Germany (the central DM zone) in 1998 was 14%. Here is the difference between the Euro zone and the D-Mark zone. (4) On the spot markets, the share of the Euro against the yen and the pound decreased between 2001 and 2004.

Table 5 Forex market turnover by currency pairs  
(Daily average in April, in %)

	All Transactions			Spot Transactions		
	1998	2001	2004	1998	2001	2004
USD/euro	-	30	28	-	29.9	33.3
USD/mark	20	-	-	24.9	-	-
USD/other EMS	17	-	-	5.9	-	-
USD/yen	18	20	-	20.9	20.9	16.7
USD/sterling	8	11	14	6.6	7.2	9.9



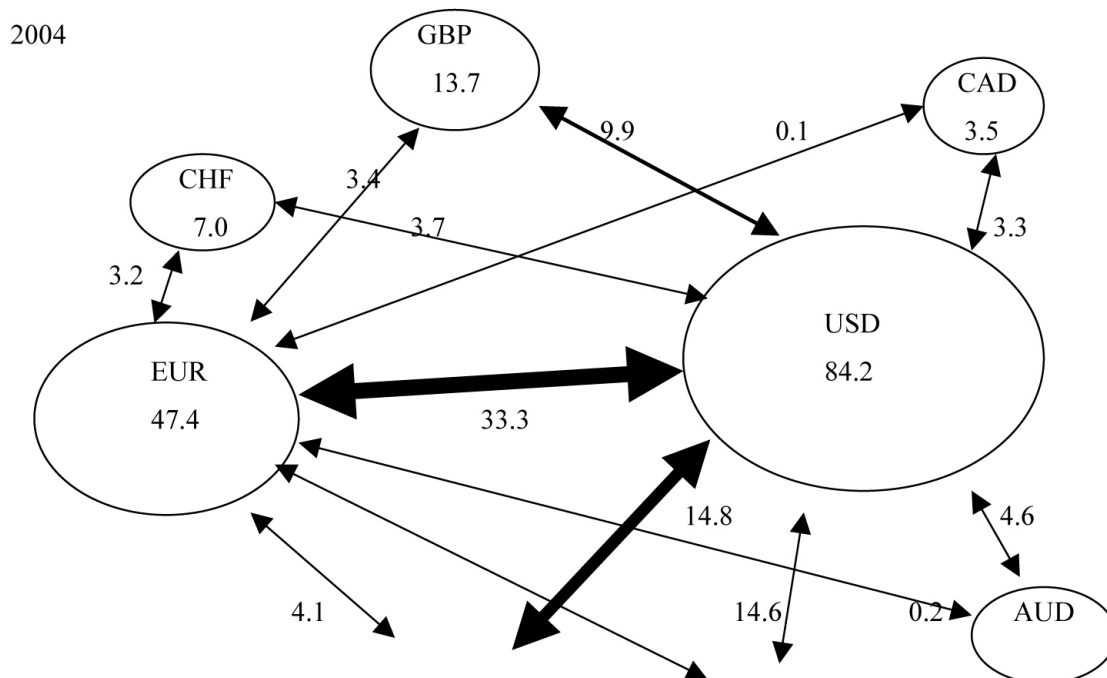
USD/Swiss franc	5	5	4	4.1	4.6	3.6
USD/other	18	25	25	16.3	21.8	23.5
Euro/yen	-	3	3	-	4.7	3.8
Euro/sterling	-	2	2	-	3.2	3.0
Euro/SF	-	1	1	-	2.2	2.8
Euro/other	-	2	2		3.1	3.1
Mark/yen	2	-	-	3.2	-	-
Mark/sterling	2	-	-	4.2	-	-
Mark/SF	1	-	-	2.7	-	-
Mark/ other EMS	2		-	...	-	-
Mark/other	1	-	-	...	-	-
Mark · euro/CECs	0.6	0.7	...	...	...	...
All currency pairs	100	100	100	100.0	100.0	100.0

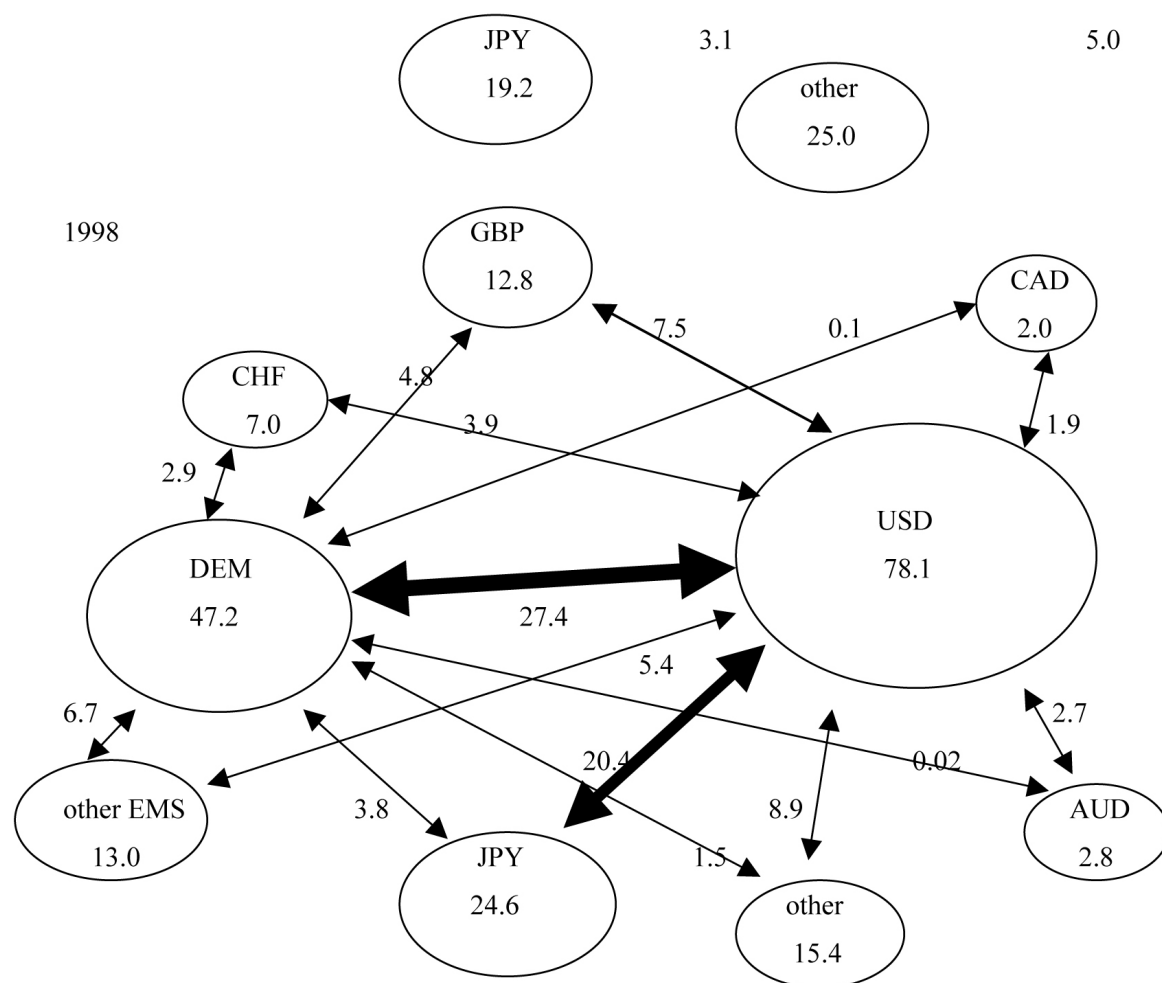
- [Note] 1. Adjusted for local and cross-border double-counting.  
 2. "Other EMS"= the currencies of the EMS except the DM + ECU.  
 3. "CECs" are Central European 5 Countries including Slovenia.  
 4. · not available.

[Source] BIS (2002), p.11-12, BIS (2005), p.10 & BIS (99, 02, 04) Statistical annex tables.

Let us have a look at the interbank spot transactions in the world in 1998 and 2004 (Figure 3), in order to estimate the function of the dollar and the Euro (comparing to the D-Mark in 1998) as the forex vehicle. The dollar occupied the biggest share in both years, but its share rose from 78.1% to 84.2%. The share of the Euro was equal to the D-Mark, but there is a big difference between the two. For the Euro, the share of the dollar as the partner currency was as high as 70%, while it was 58% in the case of the D-Mark. The D-Mark worked as the forex vehicle especially vis-a-vis the legacy currencies. But the same function of the Euro looks trivial. The dollar-D-mark bipolar system is likely to change again to the single dollar international monetary system.

Figure 3 Turnover of spot market inter-dealer transactions: global market (%)





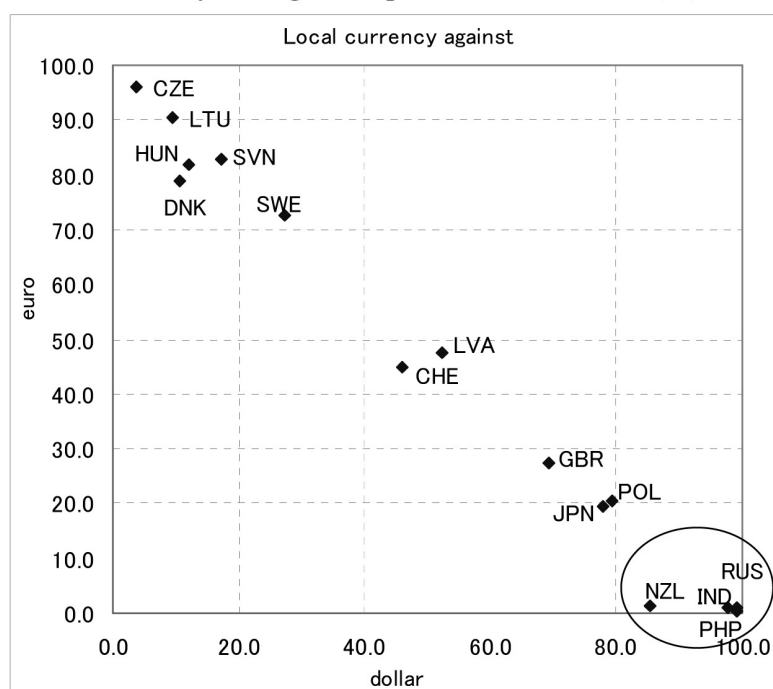
[Note]

1. Figures under each currency show the share of each currency (spot inter-dealer turnover) during April 2004 and during April 1998 (total : 200.0%).
2. Figures near the arrowed lines show the share of each currency pair in the total global transactions (total: 100.0%).
3. Total turnover on the spot markets was US\$ 300.4 billion during April 2004, and was US\$ 347.7 billion during April 1998.
4. "Other EMS" stands for the EMS currencies except the DEM ( the euro legacy currencies except the DEM + ECU + DKK + SEK).

[Source] Saitou (2005). Original sources are: BIS, Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity, Final Results May 2004, Table E.1, E.2, E.3 □ CFinal Results May 1999, Table E-1, E-2, E-3.

The strong regional focus of the Euro in the forex trading is also seen in Figure 4. The Euro trading was very heavy in the pre-Ins except the UK and CEECs (except Poland) . The group of countries belong to the Euro zone where the Euro plays a role as the forex vehicle. Some Asia countries and Russia belong to the opposite pole. Japan and the UK, the number three and four in the global forex market turnovers, are also in the dollar zone. Switzerland and Latvia occupied the intermediate position.

Figure 4 Euro and the dollar in spot inter-dealer transactions:  
Daily averages in April 2004 (%)



[Note]

1. Data for Denmark, Sweden and Hungary are total spot transactions.
2. Data for Lithuania cover all traditional foreign exchange (the spot transactions made up 89 per cent of all foreign exchange turnovers).
3. Data for Czech, Poland, Slovenia, Lithuania, Latvia, USA, New Zealand, India and Philippine are the amounts of turnover in April 2004.
4. Data of euro for Switzerland include transactions of the local currency against and the dollar against and do not include the euro transactions vis-a-vis other currencies.
5. Data for Slovenia is amounts of turnover in April 2001.
6. Grouping is tested by the cluster analysis.
7. Country Code (ISO 3166-1) CHE: Switzerland, CZE: Czech Republic, DNK: Denmark, GBR: Great Britain, HUN: Hungary, IND: India, JPN: Japan, LTU: Lithuania, LVA: Latvia, NZL: New Zealand, PHL: Philippines, POL: Poland, RUS: Russian Federation, SWE: Sweden, SVN: Slovenia.

[Source] Saitou (2005). Original data from each central bank.

### 3.3. The Euro in International Trade

Bekx (1998, p.22) predicted that "the introduction of the Euro will present a structural break in the invoicing practices in international trade relations and trade invoicing in euro will start to increase very rapidly."

On the other hand, McCauley (1997: p.63) told that "the euro would start off with an intensity (i.e. internationalization rate) of about 1, like the French franc or sterling today" and "to assume that the euro will rise to an intensity of 1.4 (in case of the DM) is to posit that the zone of heavy euro use will be as large relative to the euro area as Western Europe is to Germany."

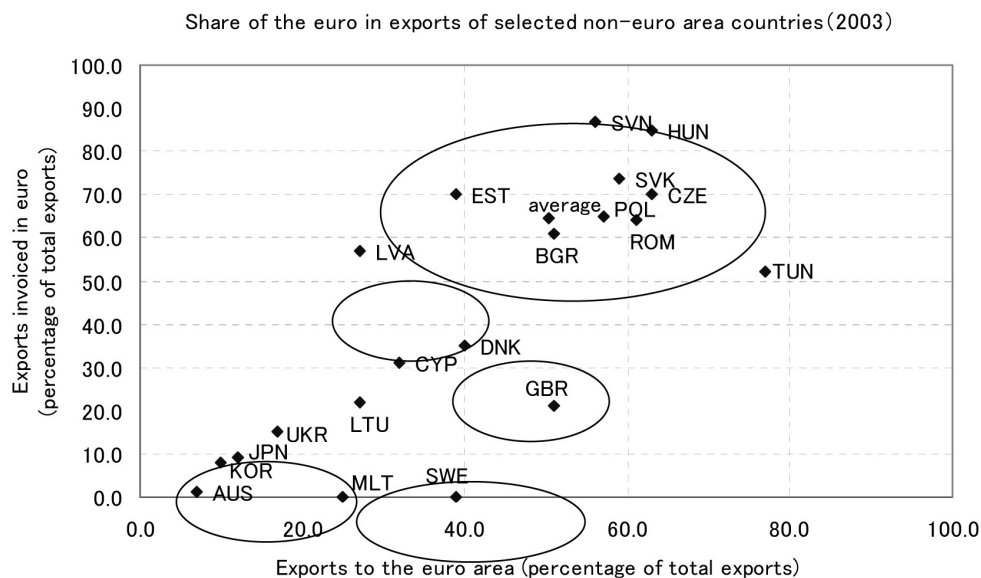
Up to now, no structural break has happened globally. But, the Euro is used partly in trade among third countries: the trade vehicle currency. ECB (2005: pp.35-37) shows that the share of exports invoiced in Euro in total exports exceeded that of the exports to the Euro area in total exports in seven CEECs (Czech Republic, Estonia, Hungary, Poland, Slovenia, Bulgaria and Romania). In the imports, the share of Euro invoicing exceeded that of the imports from the Euro area in nine countries (the above seven countries minus Poland and plus Cyprus, Latvia and Lithuania). Figure 5 also shows the settlement/invoicing function of the Euro vis-à-vis other countries only in exports. In Denmark and the UK, the share of the Euro invoicing did not rise and was much smaller than that of their exports and imports to/from the Euro area. In Asia-Pacific countries like Korea,

Australia and Japan, the share of exports invoiced in Euro was under 10%. We can see also the strong regional bias.

The internationalization ratio of the Euro area is rising. According to the ECB (2005: p.34), the share of the Euro as a invoicing/settlement currency rose sharply in recent years among Euro area countries. In 2003, 63% of Germany's extra-euro area exports of goods were invoiced in Euro. It was the highest. The lowest was Greece (47.3%). In the extra-euro area imports of goods, the highest was Spain's 60.3% and the lowest was Greece's 39.6%. The value of Germany was 55.2%. Judging from these data, the international ratio of the Euro is likely to be slightly over unity.

The problem for the development of the Euro zone is that the countries in the zone are members or candidates of the EU and will participate in the Euro area in the near future. So, the Euro area will enlarge, but the Euro zone will reduce. I name this opposite development as the "irony of the Euro as an international currency".

Figure 5 Share of the euro as a settlement/invoicing currency



[Note]

1. "Average" stands for the average of Central and Eastern Europe.
  2. Data for Tunisia is 2001.
  3. Data for Malta and Sweden are the share of imports from the Euro area and the value is on the x-axis, since the data of exports invoiced in euro are not available.
  4. Data for Slovakia, the UK and Japan are 2002.
  5. Grouping is tested by the cluster analysis.
  6. Country Code (ISO 3166-1) AUS: Australia, BGR: Bulgaria, CYP: Cyprus, EST: Estonia, JPN: Japan, KOR: Korea, Republic of, LTU: Lithuania, MLT: Malta, ROM: Romania, TUN: Tunisia, UKR: Ukraine.
- [Source] ECB (2005), table 12 & table 13 (p.35).

### 3.4. Euro Exchange Rates and the Benign Neglect Policy Stance of the ECB

The foreign exchange rate of the Euro depreciated vis-a-vis the dollar by about 30% to November 2000 since its introduction (1 euro=1.17dollar to =0.85 dollar). Main reason was huge outflow of capital from the Euro area to the US: bonds and equity investment and FDI (foreign direct investment). The rate moved up and down in 2001. But Euro appreciated from February 2002 (1 euro= 0.87 dollar) to December 2004 (1 euro= 1.36 dollar). If we take the rate of February 02 as the basis, the euro appreciated by 56% for three years. As the interest rate of the US got lowered in 2001 and 2002, the inflow of capital to the US from the Euro area decreased, so that dollar rates got down remarkably vis-a-vis the Euro.

East Asian countries wanted to keep their dollar rates relatively stable, they intervened heavily on their forex markets to buy the dollar. In contrast, the ECB intervened only several times - September 2000

(cooperative intervention of the G7) and November 2000 (three times). In the process of the euro appreciation, the bank did not intervene. The ECB is likely to work under another "benign neglect" policy alongside the USA. A reason is the so-called "inconsistent policy triangle." They say that the monetary authority cannot attain three policy objectives at the same time in the long run: price stability, free capital movement and foreign exchange stability. Therefore, under free capital transfer the ECB is able to stick to price stability only.

In 1980's, the volatility of the mark/yen was smaller than the mark/dollar (Table 4). In the 1990's, the volatility of the mark/dollar was the smallest and the yen's volatility vis-a-vis the other two currencies was the biggest. The picture changed in 2000-2001. The volatility of the yen/dollar became the smallest and that of the euro/dollar became big. It seems that such volatility trend continues until today due to difference of intervention policy between the ECB and East Asian countries including Japan.

Big volatility between the euro and East Asian currencies means that transaction costs of Euro on East Asian forex markets are large. Both the transaction volume and the volatility of the Euro are much inferior to the dollar in East Asian markets. The same applies more or less in other dollar zone countries. It seems that the Euro will find difficulty to compete with the dollar outside Europe.

Table 4 Volatility in the major foreign exchange markets(1)

	Yen/dollar	Euro(2)/yen	Euro(2)/dollar
1980-89	10.2	7.3	10.9
1990-99	11.2	10.7	9.5
1997	11.5	11.4	8.6
1998	17.5	15.4	8.2
1999	12.6	14.2	9.3
2000-2001 Q1	9.6	16.7	13.4

Note: (1) Standard deviation of annualized daily returns computed over calendar months.

(2) Prior 1999, mark/yen and mark/dollar.

Source: ECB;BIS calculations. (in: Galati/Tsatsaronis (2001) p.30)

### 3.4. The Euro as an International Asset Currency

There are three categories in an international asset currency: international procurement/investment currency at the international investor level, international lending/deposit currency at the bank level and reserve currency level, shown in Table 1.

The Euro has been used in international asset markets issuing bonds and notes and money market instruments as procurement/investment currency. International issuance is defined as issuance in a currency other than the currency of the country in which the borrower resides. In the first quarter of 2004, major currencies' shares in international debt securities supply measured at current exchange rates are as follows: the dollar 42.4%, the Euro 31.2% and the yen 9.0%. At the beginning of 1999, the share of each currency was: the dollar 47%, the Euro 20% and the yen 18%. As many corporate borrowers tend to rush to take advantage of low-yield environment, the dollar's share dropped in its high interest rate period (from 1999 to first half of 2001) and the Euro's share rose during the time. But, international issuance in US dollar increased even more sharply during the summer 03 and the summer 04 due to its low interest rates, expected tightening of US monetary policy and perception of continued dollar depreciation. In addition, a number of large emerging countries, such as China, Russia and Turkey, led to heavy borrowing mainly in US dollar.

The majority of non-euro area issuers in Euro are from the private sector of developed countries. In the period from July 03 to June 04, they accounted for 85% of total issuance. US and British commercial banks, US investment banks, big US manufacturers, and financial institutions of Sweden and Denmark are top class issuers of euro -denominated bonds. Two thirds of issuance of international bonds are issued by American inhabitants. CEECs, such as Poland, Czech Republic and Hungary are main sovereign borrowers. In the new

member countries of the EU, 75% of international issuance were denominated in Euro and only 13% were in US dollar. In contrast, emerging countries outside Europe depend on dollar issuance and the share of the Euro is low (in the period under review, 68% were denominated in dollar and 28% were in euro).

The US investors bought only a tiny share of euro-denominated international bond issues. From 1999 to 2003, European investors, including those in both the euro area and the UK, dominantly bought 80% of the euro-denominated international bond issues.

An analysis of a study group in the ECB on the regional breakdown of the outstanding stock of international debt securities and currency denomination confirms the strong regional focus of the international role of the Euro with regard to its function as a financing currency [11].

There seems to be a tendency that issuers belonging to the dollar zone issue in dollar and issuers of the Euro zone issue in Euro. Then, what is said in the chapters trade and forex vehicles hold true in international procurement/investment currency.

How about the international lending/deposit currency level and reserve currency level? To change deposit currency from the dollar to the Euro is far easy in comparison with changing the invoicing currency. ECB (2005a) investigated in what currency the OPEC countries and Russia held their oil revenue during 1999-2005. During the seven years, the Euro fell in the first two years against the dollar by 30 percent. From 2002 to 2004, the Euro rose sharply from 0.87 dollars to 1.34 dollars (monthly average) against the dollar. In 2005, the dollar returned somewhat against the Euro due to the rising interest rate of the dollar.

During the two years after 2002, the oil revenue of the OPEC and Russia increased from 250 billion dollars in 2002 to 600 billion dollars in 2004 because of the steep ascent of the oil prices. The OPEC increased the Euro deposits share from 11 percent at the beginning of 1999 to 28 percent in the first quarter 2004, but shifted again to the dollar deposits in spite of the rising Euro rate vis-a-vis the dollar by about 10 percentage points to 61 percent. But the OPEC's holding of the US Treasury bonds stock decreased by 14 percent in 2005. Russia's deposits in dollars decreased from 80 percent in 2002 to 60 percent at the beginning of 2005 and the share of the Euro rose from 11 percent to 31 percent.

Sweden, Russia and other countries raised the share of the Euro in their foreign reserves. But Asian countries want to hold relatively stable foreign exchange rates vis-à-vis the dollar even after the East Asian crisis in 1997/98. Dooley/Folkert-Landau/ Garber (2003) maintained that the "revived Bretton Woods" prevailed between the USA and Asian countries. Between 2002 and 2006, the foreign reserves of the East Asian central banks, especially of Chinese and Japanese, rose by 1 trillion dollars. The trend of transfer from the dollar to the Euro in foreign reserve structure will depend on the behaviour of the East Asian central banks.

During the first and second oil price shocks and thereafter, the oil-producing countries held their revenue solely as dollar deposits in Anglo-Saxon banks. In contrast, the oil-producing countries diversify investment currencies and investment assets during the recent period of the steep oil price rise which might be said appropriately the third oil shock. The Euro as the asset currency is surely the second favourite currency in the world. When the dollar depreciates by 30 or 40 percent vis-à-vis the main currencies in order to restore its current account balance in the near future, it is expected that the Euro will show its reason d'être.

### CONCLUDING REMARKS

The Euro becomes the second most important international currency. But it has the strong regional focus in each function of an international currency. The Euro is the regional international currency in Europe. Its vehicle role is limited inside Europe and inferior to that of the D-Mark in a sense that there are no big economies surrounding the Euro area. And the Euro-zone countries in Europe will participate in the Euro area in the future. The Euro area will enlarge, but the Euro zone will scale down.

Outside Europe, the gap between the dollar and the Euro will not be filled. As the transaction volume and volatility of the Euro is much inferior to the dollar in the dollar zone, it will highly difficult for the Euro to come up to the dollar. After CEECs will participate in the Euro area, the international monetary system will not go to the dollar-Euro bipolar system, but might return to the single dollar system, at least in invoicing/settlement function.

In the field of international asset currency, the Euro showed its attractiveness in the deposits of the oil-producing countries and in the composition of the reserve currencies in several countries. During the coming dollar precipitation period, order to change the tide, the Euro will show its reason d'etre and contribute to the normalization of the American balance of payments.

Bergsten (2005) proposes a "Finance G-2" organized informally between the USA and the Euro area authorities [12]. East Asia has no its own international currency. Bergsten said that "Asia is not reliable" as the partners in international currency matters. To consult with Europe to control the fall of the dollar may be very important.

Considering the historical development of the European monetary integration since 1970s, I am sure that the main role of the Euro should not be the direct challenger to the US dollar in the global context, but the persistent stabilizer in the wider Europe and occasional stabilizer in the world. As the Euro consolidates its role as the second international asset currency, the Euro will be able to play roles as the stabilizer on the two dimensions. Then, the Euro will serve for not only the Europeans but also the people of the world. It can be said an international public goods.

### Notes

- [1] For any pair of bilateral trading partners, one of the two currencies is defined as "major" if it is used as the dominant form of pricing in both directions; the other currency is "minor". "Symmetric" occurs when one country's currency dominates trade in one direction while the other country's currency dominates trade in the other direction. Maggie and Rao (1980), p.368.
- [2] Normally they divide into only private sector and monetary authority. But we believe a dimension of banks is indispensable to clarify the roles of an international currency.
- [3] Harmann (1998), p. 23. See also Fleming (1997), p.21.
- [4] TANAKA (1996) and IWATA (1996), presented to the "Workshop on Deutsche Mark, Euro and Yen as International Currencies", held at HWWA-Institute, November 25-26,1996.
- [5] The internationalization of the (domestic) securities markets was the third stage of the development of the international finance after the Second World War following the traditional foreign securities market (the first stage) and the Eurobond (Euro-equity) markets (the second stage). Refer to U.S. Securities and Exchange Commission (1987). The USA had a huge lead in this third stage. It began the deregulation in 1975. The UK embarked on the "Big Bang" in 1986 and the EC countries followed these two Anglo-Saxon countries in the process of completing the internal market.
- [6] Group of Ten (1993), p.85.
- [7] Monthly report of the Deutsche Bundesbank, April 1991, p.24.
- [8] McCauley (1997), p.7-9.
- [9] See Gros/Thegesen (1992), p.139, Table 4.5.1.
- Portes/Ray (1998) proposed "the vehicle currency triangle" to consider prospects of the Euro. It presupposes only one vehicle currency in the world (the triangle can have only one vehicle currency in the middle of the triangle). So, it is inappropriate to show a double vehicle currency situation. The triangle they showed in Figure 4 (p.318) to represent the "present situation" is incorrect, since it does not show the role of the DM as the regional vehicle currency. The triangle seems also inappropriate to draw prospects about the Euro, because the Euro will become a regional, not a global, vehicle currency and on spot markets for the time being.
- [10] "Since the introduction of the euro, sterling has become one of the important European currencies, in part because its exchange rate fluctuations against the euro and the dollar are amendable to certain investment strategies. Institutional investors, hedge funds and large corporations have actively engaged in such strategies." (DNB, p.23)
- [11] The explanation of this section depends mainly on ECB (2005).
- [12] Refer to Chapter 3 of Posen, Adam S (2005).

### References

- Ahearne, Alan & Jean Pisani-Ferry (2006), The Euro: Only for the Agile, *bruegel* policy brief 06/1, February.
- Belke, Ansgar and Daniel Gros (2006), Instability of the Eurozone? On Monetary Policy, House prices and Structural Reforms, Paper presented at the "Second International Workshop of the Joint Research Study Group "EU Economy" of EUIJ Tokyo Consortium Conference, September 23, 2006 in Tokyo.
- Bergsten ///
- BIS (1990, 1993, 1996, 1999, 2002,2005), Central Bank Survey of Foreign Exchange and Derivatives Market Activity in the year 1989, 1992, 1995, 1998 and 2001.
- CEPR (1997), Options for the Future Exchange Rate Policy of the EMU, CEPR occasional Paper No.17, December.
- DNB (Dutch National Bank) (2004), Foreign exchange market survey 2004: major increase in turnover, *Statistical Bulletin*, December.
- Dooley, Michael/ David Folkert-Landau/ Peter Garber (2003), An Essay o the Revived Bretton Woods System, *NBER Working Paper* 9971.
- European Central Bank (2005), *Review of the International Role of the Euro*.
- European Central Bank (2005a), *Review of the International Role of the Euro*.
- European Commission (1997), *Economic Policy in EMU Part A Rules and Adjustment* by DG2 of the European Commission, Economic Papers No.124, November 1997
- European Commission (1997a), External Aspects of Economic and Monetary Union, SEC(97) 803, April.
- Fleming, Michael J., The Round-the Clock Market for U.S. Treasury Securities, in: Federal Reserve Bank of New York, *Economic Policy Review*, July 1997, Vol. 3 No.2.
- Galati, Gabriele and Kostas Tsatsaronis (2001), The impact of the euro on Europe's financial markets, in: *BIS Working Papers* No.100, July.
- Gros, Daniel and Niels Thygesen (1992), *European Monetary Integration. From the European Monetary System to European Monetary Union*, Longman.
- Group of Ten (1993), *International Capital Movements and Foreign Exchange Markets*. A Report to the Ministers and Governors by the Group of Deputies.
- Hartmann, Philipp (1998), *Currency Competition and Foreign Exchange Markets/ The Dollar, the Yen and the Euro*, Cambridge UP.
- Ifo (1998), Der Euro - das Ende der Vorherrschaft des Dollar?, in: Schenlldienst 8/98 vom 16. Maerz.
- IMF (1993), *International Capital Markets*. Part I. Exchange Rate Management and International Capital Flows.
- Inoue, Ichiro (1996), *International Currency in Asia*, mimeo.
- Iwata, Kenji (1996), *Portfolio Investment within Europe After the Mid-1980's*, mimeo,
- The Japan Research Institute (1997), The Research on Economic Relations Between Asia and Europe, March.
- Magee, Stephen P. and Ramesh K. S. Rao (1980), Vehicle and Nonvehicle Currencies in International Trade, in: *American Economic Review*, Vol. 70 No.2 ( May), pp.368-373.
- McCauley, Robert N. (1997), The Euro and the Dollar, *BIS Working Papers* No.50.
- Page, S. A. B. (1982), The Choice of Invoicing Currency in Merchandise Trade, in: *National Institute Economic Review*, November.
- Pisani Ferry, Jean (2006),
- Posen, Adam S (2005), *The Euro at Five: Ready for a Global Role?*, Institute for International Economics.
- Saitou, Tomomi (2005), An Analysis of the Euro as a Regional International Currency (mimeo).
- TANAKA, Soko (1996), *How the Deutsche Mark Zone Works - Discussion in Japan -*, Tohoku Discussion Paper No. 136.
- TANAKA, Soko (1998), The Euro and the International Monetary Regime", *Sekai Keizai Hyourn*, December (in Japanese language).
- Tanaka, Soko (2001), External Aspects of the Euro - An East Asian Perspective -, in: Pitta e Cunha, Paulo de/Manuel Porto (Coord.), *The Euro and the World, Almedina*.
- U.S. Securities and Exchange Commission (1987), *Internationalization of the Securities Market*. Report of the U.S. Securities and Exchange Commission to the Senate Committee on Banking, Housing and Urban Affairs and the House Committee on Energy and Commerce, July 27.