

EMU

AN INCOMPLETE PROJECT?

Edited by
Janusz Bilski
and
Ewa Feder-Sempach

Difin

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Introduction

The title of the monograph “EMU – an Incomplete Project?” can be interpreted in two ways. The first interpretation suggests that monetary integration should be complemented with fiscal and banking union and with the advancement of the political union. Such approach dominates currently in the literature as well as in the opinions presented by the eurozone authorities and by the governments of the major Member States. Institutional development and accelerated process of competence transfer from national to supranational level is supposed to remedy the crisis and make the eurozone mechanisms operate more effectively. The position is shared by some authors (e.g. M. Janicka).

There is another group of authors who propose a different diagnosis of the crisis of monetary integration in Europe (e.g. J. Bilski). According to them, “EMU an Incomplete Project?” means intensive actions are needed to create more economic freedom, support competitiveness and deepen the EU common market. EMU should be based on the development of market mechanisms rather than on strong institutional links. The authors are of the opinion that the development of the common market in the eurozone has not progressed since the mid-1990s. The EU market is still fragmented, full of legal, administrative and political barriers, which involves the risk of increasing external imbalances in the eurozone countries.

The work aims at evaluating the advancement of monetary integration in selected areas of the EMU and proposes directions for further development in the forthcoming years.

Chapter ONE

The Start of EMU and the Euro

JANUSZ BILSKI¹

1.1. The emergence of international currency in Europe

Foreword

Today, only few people can remember that one of two the main reasons of currency integration in Europe at the turn of the 1960s and the 1970s was the collapse of the Bretton Woods system. The old order based on fixed exchange rates falling into pieces and weak US dollar threatened the then achievements of the EEC. No matter, how we read it today, European politicians and economists feared that exchange rate fluctuations by several percent will devastate the effects of the customs union and the mechanism of Common Agricultural Policy with the so called “green dollar” (Pelkmans, 2001, p. 329).

Under the instability of the global foreign exchange system, the EEC member states decided to establish their own, relatively independent autonomous currency area. Their attention focused on building exchange rate mechanisms that would allow stabilise fluctuations of national currencies against one another and in relation to the US dollar². No-one, or rather very few, thought at that time about creating a common currency, which could gradually take over monetary functions of the dollar. That was considered an unfeasible project because of the dominant position of the US dollar in the Bretton Woods order. We should remember at this point, that at the turn of the 1960s and the 1970s the IMF experimented with a new currency – SDR. The effects were not too much impressive, which could discourage from making further attempts. With the benefit of the

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² Werner Plan, the first project did not provide of the introduction of a common currency.

hindsight, we can say that the situation was paradoxical. An autonomous foreign exchange area was created based on the American dollar and designed to give independence from destabilising impact of the American currency.

1.1.1. The functions of an international currency

From the perspective of the beginning of the 1970s, the situation seemed different. EEC member states wanted to establish a currency (exchange rate) union within the framework of Bretton Woods rules and with US dollar as the hegemon in the system. Experiences of foreign exchange integration of the 1970s and the 1980s demonstrated that the development of an autonomous dollar-based currency area will never be successful – what was needed was European common currency³. Remarkably, the theory of the Optimum Currency Area (OCA) established at the beginning of the 1970s and developed in the 1980s and in the 1990s did not provide for a common international currency but opted for fixed exchange rates between the countries of the Union.

The emergence of the new European currency is one of the most interesting phenomena in contemporary global economy. The adoption of euro is the outcome of a deliberate, active policy of the Community, on the one hand, and, on the other hand, of the evolution of financial markets. Erosion of the functions of dollar opened up the space for a new regional currency. The evolution consisted in gradual substitution of dollar's monetary functions with ECU, followed by the euro. The process was relatively quick and organised in clearly separated stages. It lets us observe the extension of currency sovereignty of the Community member states at the cost of dollar. Like in a laboratory, we may trace the birth and development of a new international currency.

The analysis covers the years 1970–2012, i.e., from the start of currency integration (Werner Plan). The analysis will focus on how dollar fulfilled the functions of the world currency at subsequent stages of currency integration.

In economic literature we come across various views on the functions of international currency⁴. The most disseminated is the division of functions into two spheres: public and private (Cohen, 2000). The division is there to show, which functions derive from decisions of monetary authorities (national and

³ For political reasons, basing the currency area on any of national currencies was excluded.

⁴ Even if the currency is referred to as the “reserve currency” (e.g., M. Melvin, *International Money and Finance*, HarperCollins Publishers 1992, p. 56), the functions are the same.

international) and result from deliberately organised foreign exchange system, and which result from the foreign exchange and participants-specific structure of individual segments of international financial market.

Contemporary studies attempt to modify the classical system to better adjust it to the needs of statistical analyses (Thimann, 2009, p. 26). This paper also makes such an attempt.

Classification that we use is the following:

Table 1.1: The functions of an international currency

	Public sphere	Private sphere
I. Unit of account	1. Exchange rate denominator (numéraire) 2. Intervention thresholds	Invoicing currency
II. Means of payment	1. Intervention currency 2. Official liquidity	1. Vehicle currency 2. Private liquidity
III. Store of value	Official FX reserves	Investment currency

I introduced some modifications into B.J. Cohen's classifications. They include:

1. Unit of account: in the public sphere, besides exchange rate denominator, intervention thresholds are included, which is connected with solutions applied in the EMS, where different techniques were used to specify exchange rate fluctuation scales⁵.
2. Means of payment: the function of the means of payment is interpreted more broadly than in Cohen's classification. Above, the means of payment includes also the role of international liquidity component. In the public sphere it is the so called official liquidity, in the private sphere it is private liquidity.

Economic literature provides various definitions of international liquidity. For example J.J. Polak and P.B. Clark (Polak, Clark, 2002, p. 6) use a narrow interpretation of the term "international liquidity" by making it, in principle, equivalent to foreign exchange reserves. R. Rüffer, L. Stracca (Rüffer, Stracca, 2006) use the broad term of "global liquidity", which includes the liquidity of national and foreign markets.

⁵ In the ERM the use of parity grids in currencies of the member states became the catalyst of using the EU currencies for intervention purposes.

J. Walmsley (Walmsley, 1985) defines international liquidity as assets that may be transferred between countries. The definition is so broad that it would be difficult to analyse the function as played by the US dollar, ECU or euro using it as a starting point.

For the needs of this paper we will be using the term defined by F. Aschinger (Aschinger, 1975, p. 170). According to him, international liquidity can be divided into private and official. Official liquidity can be compared to official foreign exchange reserves. The categories are very similar in terms of value hence in the Table we will present data on reserve assets.

Private liquidity consists of the reserves of commercial banks, investment funds, hedge funds, and international corporations. Obviously, private liquidity specified as above may be difficult to grasp for statistical analyses, that is why I introduced certain simplification, which allows to statistically identify changes in liquidity. The assumption is that private liquidity is transferred in international finance through the “cross-border position” of commercial banks vis-à-vis economic operators.

Cross-border position vis-à-vis all sectors includes all assets and liabilities of commercial banks vis-à-vis all the remaining segments of the world economy.

In “currency breakdown” approach the data inform us of the use of individual currencies (dollar, euro) outside of their domestic markets, which is a good representation of the actual international position of a currency.

The use of the cross-border position in statistical analyses is also a good idea since the Bank for International Settlements (BIS) has been calculating the ratio since 1977, which ensures the analyses of comparable data available for more than 30 years.

Store of value: official foreign exchange reserves are equivalent of unconditional official liquidity. In the private sphere investment currency is defined as the primary component of international bond market.

The above presented reinterpretation of the functions of international currency is dictated by three reasons:

1. The need to adjust theoretical currency functions to concrete solutions of subsequent EU exchange rate regimes. It allowed to follow the changes in fulfilling them by the US dollar.
2. The second reason is connected with the evolution of international finances after World War II manifested by enhanced role of private liquidity in the international foreign exchange system. Creation and distribution of international currency changed. Until the end of the 1970s international currency was created by the states: central banks, public institutions. Over the last

two decades global liquidity is created and distributed by broadly understood institutions of the private financial market. At present private liquidity plays the dominant role, currency transfers take place by transferring components of this very liquidity.

3. And finally, to complete considerations over contemporary functions of international currency we must pay attention to the following fact. The above outlined functions are not a loose collection of elements but they make up a coherent system of interrelated functions. It is impossible, e.g., to be the main component of private international liquidity without performing the function of a reserve currency. Likewise, a currency may not be an intervention currency without being the numéraire of the exchange rate mechanism or the vehicle. It is of course possible that in transitional periods a currency emerges to perform the function of international currency to a limited extent. The verb “to perform” must be immediately qualified here as the performance in this case is incomplete, limited in time and based on political decisions.

One of the goals of our study is to describe these transitional periods when EU was using imperfect (defective) regional currency.

A very important issue examined in the paper is the identification of feedbacks and interdependences between the functions of international currency. We will also try to answer the question whether there are “important” and “less important” functions?

Until now, the establishing of the currency union can be divided into the following periods:

- 1) 1970–1974 Werner Plan, “currency snake”,
- 2) 1974–1979 area dominated by the DM,
- 3) 1979–1999 EMS, ERM,
- 4) 2000–2012 initial phase of euro area.

1.1.2. Werner Plan

Implementation of the first official currency union project, the so called Werner Plan, involved a very intriguing solution in the area of the exchange rate (1 July 1972). It was the so called currency snake, exchange rate mechanism, which in a modified version, has practically remained operational until today.

The then adopted construction of exchange rates was an attempt to reconcile the tendencies in the Bretton Woods system with the requirements of monetary integration. The creation of a currency unit assumed gradual reduction of exchange

rates margins of fluctuation, while in the international foreign exchange system at the beginning of the 1970s the need to make exchange rates more flexible was becoming increasingly clear.

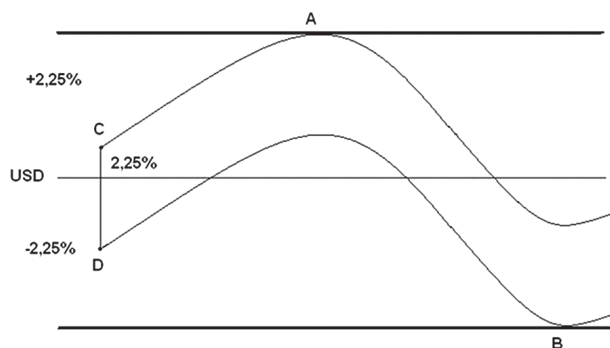


Figure 1.1: Currency snake mechanism

Own analyses.

In 1973 fluctuation margins in relation to the US dollar were given up.

The system used two bands for fluctuation margins, a narrower one, the total width of 2.25% (C–D) for EEC currencies; and a wider one $\pm 2.25\%$ (4.5%, A–B) in relation to the dollar. It meant all the Community currencies were supposed to remain within the band of 2.25%.

American currency was the basis of the exchange rate mechanism and it was the denominator for central rate.

In the snake there were two types of currency interventions.

1. Interventions in points C–D to maintain the maximum span of the snake; applied mechanism of identifying intervention thresholds, the so called parity grid, ensured concurrent intervention of two central banks: the ones issuing the strongest and the weakest currencies. Parity grid was calculated in the EEC currencies, thus, theoretically, EEC currencies could be used in intervention. The possibility was there but in practice it happened extremely rarely (mainly DM) as the vehicle and denominator was the US dollar.
2. Interventions in points A–B ($\pm 2.25\%$) in relation to the US dollar effected 100% in American currency.

Brief description of the snake and its mechanism help us to assess to what extent US dollar and EEC currencies performed the functions of international currency in the system.

Table 1.2: USD and EEC currencies as international currencies in the period 1970–1974

Functions	Years	USD %	DM %	EEC currencies %
1. Unit of account	1970–1974			
a. Public sphere				
– denominator		100%	– ¹	–
– intervention thresholds		100%	–	–
b. Private sphere				
– invoicing currency for trade	1970–1974	80	15	20
2. Means of payment	1970–1974			
a. Public sphere				
– intervention currency		100	–	–
b. Private sphere				
– vehicle		100	–	–
– private liquidity ²		75–80	15	X ³
3. Store of value				
a. Public sphere				
– reserve asset (FX reserves)	1970 1972 1973 1974	86 84 76 72	2–3 3–3.5 6 5 (7.1) ⁴	14.3
b. Private sphere				
– investment currency ⁵		X	X	X

¹ “–” does not perform.

² Due to the absence of data, values are estimated based on the share of currencies in trade in euro-currency market.

³ “X” no data available.

⁴ In brackets – acc. to M. Melvin.

⁵ Between 1970–1974 eurobonds and international bonds did not play any major role, the market was at its outset.

Sources: Data from the 1970s may be incomplete and incomparable due to difficult access to data and different estimation methodologies used by various authors.

R. Portes, H. Rey, The Emergence of the Euro as an International Currency, NBER Working Paper nr 6424, 1998.

A. Bénassy-Quéré, B. Mojon, A.D. Schor, The International Role of the Euro, CEPII Nr 1998–03 July.

B. Eichengreen, D. Mathiesan, The Currency Composition of Foreign Exchange Reserves: Retrospect and Prospect, IMF Working Paper 2000 no. 131.

IMF Annual Report 1996.

G.J. Almekinders, Foreign Exchange Intervention. Theory and Evidence, Edward Elgar, London 1998.

Despite the crisis of the Bretton Woods system, the beginning of the 1970s was still the period of US dollar domination. In the public sphere, the USD is the basis of the system (intervention thresholds, unit of account). In official reserves we can observe the drop in the share of US dollar in global currency reserves from 86% to 72%. However, attention should be drawn to the fact that at that period global reserves skyrocketed from SDR 54.4bn in 1970 to SDR 140bn in 1975. Private liquidity also increased.

In the above discussed period, the use of the Deutsch Mark as a regional currency gradually intensified. According to G.J. Almekinders the DM was used to a limited extent as intervention currency and as a component of international private liquidity (euro market 15%).

1.1.3. Deutsch Mark area

Mid 1970s in the EEC witnessed interesting emergence of an area dominated by the Deutsch Mark (Brown, 1974). The reason was, among others, the failure of Werner Plan. Out of big currencies, only the DM remained in the currency snake and it started to dominate the exchange rate system. Interestingly, the process was of market nature, market mechanisms gradually promoted the DM to become the leader in the region.

The establishing of a currency union at the EEC level was stopped at European scale. A DM-based hierarchical currency system emerged. From the point of view of the market (not politics) the process was favourable. Market forces and the needs of EEC financial markets promoted the DM as a regional currency. It demonstrated that Europe needed a single currency (national or international) to gradually restrict the importance of the US dollar.

In the second half of the 1970s some of the EEC states maintained fixed rates in relation to the DM (e.g., Benelux, Austria, Sweden⁶), other countries applied floating exchange rates (France, Italy, United Kingdom). Studies conducted by B. Brown (Brown, 1974)⁷ revealed clear correlation of short-term exchange rate fluctuations of the majority of the EEC currencies to the DM. As a result, regionally Deutsch Mark was used as an informal denominator of exchange rates and to identify intervention thresholds. Stabilisation of exchange rate fluctuations in

⁶ Austria and Sweden at that time were not EEC member states but they coordinated their currencies fluctuations with the Deutsch Mark.

⁷ It is confirmed by later studies b, e.g., G. Galati, The Dollar – Mark Axis, BIS Working Paper 1999, no. 74, p. 6.

relation to the DM called for the use of the currency as intervention currency. The then EEC foreign exchange situation was determined by the changes of DM exchange rate to the USD; it was the so called dollar-mark axis. International currency functions in this period are presented in Table 1.3.

Table 1.3: USD and EEC currencies as international currencies in the period 1974–1979

Functions	Years	USD %	DM %	EEC currencies %
1. Unit of account	1974–1979			
a. Public sphere				
– denominator	1978	50	informal	14 ¹
– intervention thresholds		100	informal	–
b. Private sphere				
– invoicing currency for trade ²	1979	57	–	17
2. Means of payment				
a. Public sphere				
– intervention currency		90	7	10
b. Private sphere				
– vehicle	1974–1979	95	X	5
– private liquidity component (cross-border position)		D1/C1 ³		E1/C1 ³
	1977	69		19
	1978	69		21
	1979	68		21
3. Store of value				
a. Public sphere				
– reserve asset (currency reserves)	1975	70	7	9
	1977	72 (80) ⁴	9.3 (5.5) ⁴	10.5
	1979	65 (75) ⁴	12.8 (9.7) ⁴	14.3
b. Private sphere				
– investment currency	1979 (eurobonds)	70	6	X

¹ CFA franc area – 14 African countries.

² Invoicing currency in international trade (not individual countries).

³ Cross-border position ratio D1/C1 is the ratio of USD – denominated assets of commercial banks against all sectors to total assets denominated in foreign currencies of commercial banks against all sectors. E1/C1 is an analogous ratio for assets denominated in EEC currencies.

⁴ In brackets data according to M. Melvin.

Source: see Table 1.1, and: BIS Quarterly Review, March 2011 (and earlier editions).

Data in the Table clearly show that in Europe an autonomous currency area started to emerge. Time-wise it coincided with the collapse of the Bretton Woods system and the restriction of the role of the USD. In 1978 forty three countries across the world were using US dollar as the denominator of the exchange rate mechanism. French franc played the same role for 14 countries, mainly of Western Africa (franc area). For other countries denominators were SDR (15) or individually construed currency baskets (21 countries).

The above indicates that the US dollar was the official unit of account only in ca. 50%. However, the data distort the then reality. Firstly, SDR as exchange rate denominator was often used (mainly by Arab countries) as a way of political demonstration. These countries wanted to show that they were getting independent of the US dollar. In practice, they were still using USD as a vehicle and as intervention currency. Secondly, the role of franc CFH as an exchange rate denominator was the derivative of political and economic dependence of the countries of West Africa on France and was of marginal importance for international finances. Thirdly, individually construed currency baskets were dominated by the US dollar. It means, the USD, indirectly, was still the exchange rate denominator.

In this period the importance of the Deutsch Mark as reserve currency increased, reaching, according to M. Melvin ca. 15%. At the same time, the share of the USD as a reserve currency became clearly limited.

The share of the EEC currencies in international finances (in particular DM) is illustrated by the ratio of the share of Community currencies in assets and commercial banks reserves (E1/C1 ratio); in 1979 the ratio achieved ca. 21%. The increase was at the cost of the position of the US dollar.

1.1.4. European Monetary System

European Monetary System was established in 1979, the decision put an end to the emergence of DM-dependent area.

The System comprised three elements:

- Exchange Rate Mechanism (ERM),
- European Currency Unit (ECU),
- European Credit Facility.

From the point of view of studies, which we present here, the first two elements are the most important. They were decisive for making the European currency area independent. In the ERM, for the first time after World War II, exchange rate arrangement officially did not use the US dollar as system denominator and

intervention thresholds were identified in the common currency and in currencies of the member states. Operating principles of the ERM are presented on the figure below.

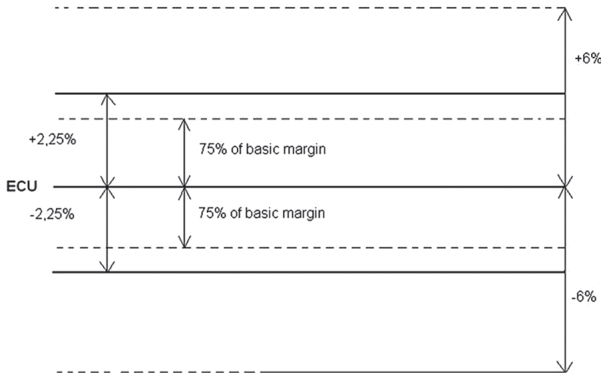


Figure 1.2: ERM operating principles

Own analyses.

Since 1993 fluctuation margins around ECU were $\pm 15\%$.

Intervention thresholds A,B,C, etc. identified the span of fluctuation margins. The primary margin was the span of $\pm 2,25\%$ and it was adopted for the majority of Community currencies; when points C–D were reached, mandatory interventions were undertaken on the currency market by two countries of the strongest and the weakest currencies (parity grid). Margins within E–F points were the so called intra-marginal margins; its span accounted on average for 75% of the basic margin. Interventions in points E–F were not mandatory, however, the Community recommended steps to be taken as preventive actions to avoid reaching C–D thresholds. Operating technique here is based on intervention thresholds around the central parity. Differently from the parity grid, actions are undertaken by individual countries.

The above presented ERM mechanism may suggest that US dollar was eliminated from the new exchange rate structure. That, however, was not the case. The way ECU was defined and how it was calculated in relation to member currencies meant that dollar still provided (informal) foundations for the system. In brief, foreign exchange market did not allow to create exchange rate mechanism without US dollar. The reason was that foreign exchange market did not quote two Community currencies directly but using the US dollar as a vehicle. High liquidity of USD assets made the use of the American currency as a vehicle cheaper.

In practice, the calculation of exchange rates of the EEC currencies was done through the cross rate to dollar. For example:

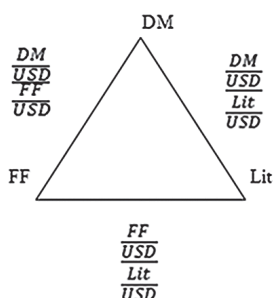


Figure 1.3: The calculation of Exchange rates of the EEC currencies

Also calculating the market value of the exchange rate of ECU to member currencies was conducted with the use of dollar. Table 1.4 shows the scope of the use of ECU, member currencies and dollar as international currencies in the Community.

Table 1.4: USD and EEC currencies as international currencies in the period 1979–1999

Functions	Years	USD %	DM %	EEC currencies/ECU %	
1. Unit of account	1979–1999				
a. Public sphere					
– denominator		informally	informally after 1992	yes	
– intervention thresholds		informally	informally after 1992	yes	
b. Private sphere					
– invoicing currency	1980	56	14	X	
	1992	48	16 ¹	X	
2. Means of payment				in intervention points	intra-marginally
a. Public sphere					
– intervention currency	1980	76		11	13
	1982	75		6	20
	1983	55		22	22
	1984	60		5	35

Functions	Years	USD %	DM %	EEC currencies/ECU %	
	1985 1992–1999	62	informally	2 X	37 X
b. Private sphere					
– vehicle ²	1989	90	27	X	
	1995	84	37	X	
– private liquidity (cross-border position)		D1/C1		E1/C1	
	1980	70.5		18.3	
	1984	78.2		12.3	
	1988	64.2		17.2	
	1992	58.9		23.6	
	1996	55.0		24.1	
	1998	52.8		23.5	
3. Store of value					
a. Public sphere					
– reserve asset (currency reserves)	1981	73.1	13.4		
	1983	72.1	12.0		
	1985	65.1	15.5	10.9 ⁴	
	1987	67.2 (56.0) ³	14.4 (13.4) ³	14.2	
	1989	60.2 (51.3) ³	19.2 (18.0) ³	10.5	
	1991	50.9	15.7	10.0	
	1993	56.2	14.1	8.3	
	1995	56.4	13.7	6.5	
	1997	57.1	12.3	5.1	
	1998	62.6	13.1	0.8	
b.					
– investment currency	1996	49.7	10.8		

¹ A. Benassy-Quéré, B. Mojon, A.D. Schor, *op. cit.*, p. 14.

² Estimated as the share of a currency in foreign exchange transactions – sums up to 200%.

³ In brackets, IMF data.

⁴ Excluding DM.

Sources: J. Bilski, Europejski System Walutowy, cele, mechanizmy, konsekwencje dla suwerenności walutowej EWG, Publishing House of the University of Lodz, 1989, p. 46.

BIS Quarterly Review, March 2010, 2011.

Currency Reserves in 1981–1989, IMF Annual Report, various editions.

M. Melvin, *op. cit.*, p. 54, reserves in 1990–1998.

Analysed period can be divided into two sub-periods of different techniques of exchange rate stabilisation and the role of the Deutsch Mark in the ERM. The turning point was 1992, when fluctuation margins were expanded from $\pm 2.25\%$ to $\pm 15\%$ from the central rate to ECU. This seemingly only qualitative change implied serious quantitative consequences. As of mid-1990s, the domination of the DM on the Community foreign exchange market was more and more visible. Exchange rate stability mechanism, existing as of 1992 was of cooperative nature, all currencies were bound with relatively narrow margins in relation to ECU. To maintain the parity grid, EEC central banks, including the Bundesbank, had to intervene. Interventions in most cases used US dollar (Almekinders, 1998, p. 68). The use of the DM in intervention could distort exchange rates inside the ERM. In external relations, the position of the ERM as a whole was decided by the DM–USD relations.

The expansion in 1992 of fluctuation margins practically constrained the role of ECU as exchange rate denominator. Currencies of the member states rarely reached maximum span of the band. In practice, member states stabilised exchange rate fluctuations within the margins of 2–3% around the central rate. Stabilisation of exchange rates to the DM–USD axis made the member states increasingly use the Deutsch Mark to intervene on foreign exchange markets, which was reflected in enhanced role of the DM as a vehicle currency (1995 – 37%) and a stable share of the German currency in reserve assets. German monetary authorities pursued an active exchange rate policy vis-à-vis the dollar and passive one vis-à-vis the Community currencies.

Data in the Table show gradual restriction of the role of the US dollar in its functions as an international currency. In the period 1980–1998, the share of the USD in cross-border position (D1/C1) was reduced by 25 percentage points. At the same time, the share of Community currencies increased by 13 percentage points (E1/C1). In the period covered by the study, the share of dollar as a reserve currency dropped from 73% to 62%. German currency recorded a rather stable share in official reserves, which was due to its monetary functions on the Community market (intervention and vehicle currency).

Other EEC currencies and ECU recorded rapid decreases in their shares in reserves, in 1998 it was below 1%. That was the effect of the advancements in creating the monetary union. In 1998 the Community decided to proceed to the third stage of the union, which meant doing away with ECU and national currencies. Thus maintaining them in reserves made no sense.

1.1.5. Euro area

In 1999 common currency, euro entered into circulation in the member states of the Economic and Monetary Union. Politicians and economists expected that shortly euro will become an important international currency. Economic position of the euro area in the world economy and the share of the EMU member states in trade provided solid grounds for the internationalisation of the common currency. The data below illustrate the process (see table 1.5).

Table 1.5: USD and euro as international currencies in the period 2000–2012

	Years	USD	EUR
1. Unit of account	2011		
a. Public sphere			
– denominator		official dollarization 8 countries	4 countries (ERM II)
		35 unofficial dollarization	3 official euroization
			2 unofficial euroization, currency areas in West Africa
b. Private sphere			
– invoicing currency ¹ exports			
euro area (trade with non-EU countries)		44	49
Africa		75	23
Asia		80	5.3
Canada		70	X
2. Means of payment			
a. Public sphere			
– intervention currency ²		X	X
b. Private sphere			
– vehicle currency ³	2001	44.9	19.0
	2004	44.0	18.7
	2007	42.8	18.5
	2010	42.4	19.5
		D1/C1	E1/C1