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## On the Role of the Single Currency ECU

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## Abstract

International money is used as a medium of exchange, as a unit of account, and as a store of value. These roles can be performed either in the private or in the public sector of the economy. In order to be considered in the decision making of international agents, the currency must fulfil some preconditions. These are the stability property of the currency, the financial market structure in the issuing country, and the transaction domain of the currency.

Once the currency has become internationally used, some benefits and costs accrue to the issuing country. The extent of the benefits and costs depends on the symmetry of the international monetary system, on the prevailing exchange rate regime, and on the provision of international liquidity. In a world with floating exchange rates, the most remarkable benefit stems from the ability of domestic traders to pass the exchange rate risk for foreigners. Also lower transaction costs due to larger trading volumes will benefit domestic agents. The main cost, on the other hand, stems from the difficulty to control the exchange rate. The price of a major international currency is determined by supply and demand, that do not always reflect the macroeconomic stance in the issuer country.

Previous experiences with internationally used currencies have shown that several developments can be identified that together imply a growing role for an international currency. Firstly, the importance of a currency has increased as a result of a stable inflation performance and a credible monetary policy. Although the objective of price stability is the explicit target of the monetary policy conducted by the ECB, it will take some time for the ECB to establish the credibility in implementing policy commitments. Secondly, a wide menu of financial instruments and lifting of capital controls has increased the popularity of the currency. The financial market in EMU will evidently be thicker than the market for any of the current EU currencies. Finally, a growing share in world trade has resulted in an increased use of the currency. The transaction domain of the single currency ECU is inherited from the current national currencies. Because of the remarkable size of EMU in world trade, the ECU could also be expected to rapidly become an important invoicing currency, which also strengthens the efficient working of the financial market. But even if the potential of the ECU to become the major international currency would be beneficial for such an evolution, the position of the USD in the international monetary system will be determining. As long as international investors see no reason to give up the use of the USD, it is extremely hard for the ECU to challenge the role of the USD as the key currency.

## Tiivistelmä

Rahaa käytetään kansainvälisissä yhteyksissä vaihdon välineenä, laskentayksikkönä ja arvon mittana. Näissä tarkoituksissa rahaa voivat käyttää joko yksityisen tai julkisen sektorin taloudenpitäjät. Taloudenpitäjät katsovat kunkin valuutan varteenotettavaksi vaihtoehdoksi päätöksenteossaan vain silloin, kun se täyttää tietyt ehdot. Valuutan tulee olla vakaa, sen liikkeeseen laskevan maan rahoitus-

markkinoiden täytyy toimia tehokkaasti ja sitä täytyy voida helposti käyttää maksuvälineenä.

Kun jokin valuutta on levinnyt laajaan kansainväliseen käyttöön, sen liikkeeseen laskevalle maalle aiheutuu hyötyjä ja haittoja. Näiden suuruus riippuu kansainvälisen valuuttajärjestelmän symmetrisyydestä, vallitsevasta valuuttakurssijärjestelmästä sekä kansainvälisen likviditeetin saatavuudesta. Kelluvien kurssien oloissa huomattavin hyöty syntyy siitä, että kotimaiset yritykset voivat siirtää valuuttakurssiriskin ulkomaisille kauppakumppaneilleen. Kotimaiset yrittäjät hyötyvät myös alhaisemmista valuutanvaihtokustannuksista, joihin päästään suurempien volyymien ansiosta. Huomattavin kustannus sitä vastoin koituu valuuttakurssin ohjailtavuuden heikkenemisestä. Kansainvälisen avainvaluutan hinta määräytyy markkinoilla kysynnän ja tarjonnan mukaan, eivätkä nämä aina heijasta valuutan liikkeeseen laskevan maan makromuuttujia.

Aikaisemmat kokemukset tiettyjen valuuttojen kehittymisestä kansainväliseksi avainvaluutaksi osoittavat, että valuutan käytön leviämiseen vaikuttavat useat tekijät. Ensinnäkin tällaisen valuutan merkitys on kasvanut, kun se on pysynyt arvoltaan vakaana ja kun maan keskuspankki on harjoittanut pitkäjänteistä ja uskottavaa rahapolitiikkaa. Vaikka valuutan vakaus on Euroopan keskuspankin (EKP) nimenomainen tavoite, EKP tarvitsee aikaa osoittaakseen harjoittamansa rahapolitiikan uskottavuuden. Toisekseen valuutan suosio on kasvanut, kun maan rahoitusmarkkinat ovat vapautuneet ja kehittyneet. Talous- ja rahoituksen (EMU) rahoitusmarkkinat voidaan ilman muuta olettaa syvemmiksi kuin yhdenkään jäsenvaluutan rahoitusmarkkinat. Kolmanneksi, maan huomattava osuus maailmankaupassa on lisännyt sen valuutan käyttöä. Yhtenäisvaluutan ecun käyttöalue periytyy nykyisiltä jäsenvaluutoilta. Koska EMU:n osuus tulevassa maailmankaupassa on huomattava, ecun voi odottaa tulevan tärkeäksi laskutusvaluutaksi. Tämä puolestaan edistäisi rahoitusmarkkinoiden kehitystä. Vaikka eculla olisi erittäin hyvät edellytykset kasvaa yhdeksi tärkeimmistä avainvaluutoista, riippuu sen kehitys kuitenkin Yhdysvaltain dollarin asemasta maailman valuuttajärjestelmässä. Niin kauan kuin kansainvälisillä markkinoilla toimivien taloudenpitäjien mielestä ei ole syytä luopua dollarin käytöstä, ecu ei voi syrjäyttää dollaria maailman avainvaluuttana.

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## On the role of the single currency ECU<sup>1</sup>

The international monetary system is concerned with flows of goods and capital flows, as well as relationships between national currencies, monetary systems and central banks. Of these elements the most basic is international money: gold, the currencies of certain important trading countries, and the liabilities of international monetary organizations. International money is used between national monetary authorities to clear final balances in international payments. In other words, they possess the widest acceptability being the recognized forms of international liquidity.

One basic feature of the international monetary system has been its asymmetry. Because countries are of very different sizes and monetary significance, only a small number of currencies are of strategic importance. The leading currency always has unique advantages and over time, unique problems special to itself. Looking back in history, in the 18th century, Dutch money, in form of gdd florins served as the main international currency. In the 19th century, the French franc had a leading role in the international monetary system, lasting till the Franco-Prussian war. The key currency position was then taken over by the pound sterling that ruled during the Gold Standard and still had major position in the international financial markets during the inter-war period. In the 1920s, the weak economic performance of Europe made the emergence of the US dollar as an international currency possible. The US economy was strengthened, national capital emerged, as well as new and stable banking system and a capacity to export capital. The collapse of European currencies in the 1930's and World War II later on established the USD as the key currency of the international monetary system.

Since the Great Depression European currencies have not had a similar potential to become key currencies in the international monetary system. A simple explanation is that, as individual countries, their relative importance in the world economy has never been large enough to back up the development of their national currency in international markets with sufficient supply. The creation of European Economic and Monetary Union (EMU) following the adoption of in the Maastricht Treaty is expected to change the position of the countries of the European Union (EU) quite dramatically in this respect. The Maastricht Treaty introduces a single currency for the whole EMU area, making EMU a huge monetary bloc in the world economy. Assuming that the transition to the common and single currency can be carried out according to plan, there will be an automatic effect on the construction of the international monetary system.

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<sup>1</sup> This paper was written during my stay at the DGII of the European Commission. I would like to thank the Commission for hospitality and acknowledge the most stimulating discussions with Fabienne Ilzkovitz and Adriaan Dierx. However, the views expressed in this paper are those of the authors and do not necessarily reflect the official position of the Bank of Finland nor the DGII of the European Commission.

## Purpose of the study

The single currency ECU, taking over the place of the national currencies, will evidently become one of the most important international currencies. A spreading of the ECU internationally is going to take place in two phases. In the short term, the ECU will immediately upon its introduction take over the roles of the present national currencies merged into it. Hence, it will be used internationally. In the long term it has the potential to develop to a key currency parallel to the USD. That development will be a long process depending not only on the potential of the ECU but also on external factors.

This paper reviews the necessary conditions for a currency to become dominant in the international monetary system. The potential for the single currency ECU to develop into a major international currency is discussed. The discussion reveals which factors are the determinant ones for the future position of the ECU in the international monetary system. Given that the single currency ECU develops to an important international currency, the paper presents potential benefits and costs accruing to EMU as the issuer of the ECU. A scenario is chosen in which the current formulation of the international monetary system continues to apply. Under floating exchange rates; factors like exchange rate risk and exchange rate developments in the long run are crucial. Given the functioning of today's international financial markets, the traditional burden falling upon the issuing country of the key currency of being obliged to supply world liquidity has lost significance. Instead, the inability of the issuing central bank to control capital flows has gained importance.

This paper does neither deal with the problems of transition towards EMU, nor does it address questions related to the physical introduction of the single currency ECU. It is assumed that EMU will start in time. Should any Member State remain outside Stage III, this is assumed not to have implications for the development of the single currency ECU. It is further assumed that the introduction of the ECU as the single currency of EMU is a smooth and successful operation.

## Outline of the study

The paper is organized as follows. Section 1 defines an international currency in general. Section 2 lists the potential costs and benefits accruing to a country issuing a major international currency. Section 3 presents the necessary conditions determining the potential of the single currency ECU to become an international currency. Section 4 is devoted for a discussion on possible consequences for EMU of being the issuer of a major international currency. Finally, section 5 summarizes and concludes the discussion.

# 1 International currency

International money is defined in terms of the functions it performs. An international currency can have three different roles. It is used (1) as a medium of exchange, (2) as a unit of account, and (3) as a store of value. These roles can be performed either in the private or in the public sector of the economy. In an international context, the use of a currency in these different functions is determined predominantly by demand factors. On the international foreign exchange markets, agents can freely choose the currency that best suits their purposes.

## 1.1 The roles of an international currency

A fully developed international currency may be defined as one that performs all monetary roles. The roles may be performed on a global scale, or they may be confined largely to a monetary region. An international currency that performs all the roles on a global scale can be defined as a key currency. A key currency is usually also used as a vehicle currency.<sup>2</sup> At that stage the market for the currency has grown so much relative to other currency markets, that the indirect exchange costs through the vehicle are less than direct exchange costs between two non-vehicle currencies. Characteristic for a vehicle currency is that it is widely known and generally acceptable and, hence, useful in invoicing, and in holding liquid balances. A dramatic feature is the impact of economies of scale: increasing use reduces transaction costs further, inducing still greater use of the vehicle. The hysteresis factor implies that there is usually only one vehicle currency in the international monetary system, other currencies being partially international currencies on a global scale, or performing all the roles of an international currency but only within a region. Sections 1.1.1 through 1.1.3 will first define the roles of an international currency and then explain what factors determine the choice of a currency for the different functions by the private or public sector, respectively.

### 1.1.1 Means of payment

The medium-of-exchange function is seen as a necessary condition to define money. In performing the role of a medium of exchange, the key attribute of money is general acceptability in the settlement of debt. An international exchange medium is involved only if the seller / lender accepts payment in the purchaser's / borrower's national currency (or in any other currency). By so doing, the seller attributes the foreign currency a degree of acceptability beyond the borders of the country issuing it.

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<sup>2</sup> For the purposes of this study, a strict distinction between a key currency and a vehicle currency is not necessary; the terms will be used interchangeably throughout the text.

Table 1.

**The different roles of an international currency**

	Private sector	Public sector
Means of payment	transactions	interventions
Unit of account	invoicing	definition of peg
Store of value	asset	reserves

In the private sector, a currency is used as a means of payment if it is chosen to settle international foreign trade and capital transactions. As a means of payment, a currency is used either in direct exchange or as a vehicle of indirect exchange between two other currencies in international transactions.

The most important factor for the choice of a currency beyond international acceptability is the transaction costs aspect. Agents will use the currency with the lowest transaction costs, these comprising of the costs for acquiring information, the costs for concluding an agreement, and the costs of implementing the transaction. Since the transaction costs are the lower, the more widely a currency is used, this self-revolving process strengthens the incentives to concentrate in one key currency. Once the economies-of-scale effect has been established, it is difficult for other currencies to go below the transaction costs of the dominant currency.

The means of payment function of a currency for the public sector is closely related to the unit of account function of the currency. In the public sector, demand for a currency to fulfill the means of payment function arises, in theory, only if exchange rate movements are constrained. Under such circumstances, the central bank needs international money to implement intervention operations in the foreign exchange markets. Under totally flexible exchange rates, on the contrary, there would be no need for intervention currencies, since central banks would not be obliged to steer the value of their national currency in the international foreign exchange markets.

In practice, central banks adapt to the market's selection of transaction currencies. There is little use for a currency as an intervention currency if it is not widely used for transaction purposes. Currencies could, on the other hand, be widely used for transaction purposes even if they would not serve as intervention currencies. A natural determinant of the choice of the intervention currency is the way in which the peg of the domestic currency is defined. Since the intention of interventions is to stabilize the exchange rate of the domestic currency vis-à-vis the (main) reference currency, that main currency serving as the denominator of the peg will be used as the primary intervention currency.

### 1.1.2 Unit of account

When serving as a unit of account, a currency is the common denominator in which goods and services are valued and debts expressed. An international unit of account is involved, in turn, whenever foreign transactions are made, independent on whether the exchange medium used is international or not. One

currency must, in any case, be used for pricing, and this currency is in that use an international unit of account.

The unit of account function of a currency for the private sector is determined by its invoicing potential. As a unit of account, the currency is used to invoice merchandise trade and to denominate financial transactions. Theoretical approaches to the determinants of invoicing currencies suggest that fluctuations in the exchange rate, the cost price of the exporter, and the sales price of the importer influence the choice of the invoicing currency most strongly. Rao & Magee (1980) construct a model assuming free trade and imperfect markets. They show that the choice of the invoicing currency depends on fluctuations in the exchange rate of the currency used for invoicing. The future exchange rate is anticipated in the price of the exported good, and the choice of the invoicing currency will depend on the relative risk of incorrectly predicting the future spot rate.

In the analysis of Bilson (1987), the underlying assumption is that both the importer and the exporter try to minimize the variations in their profits. Then the currency will be chosen for invoicing, which can absorb most of the fluctuations in the cost price of the exporter and fluctuations in the sales price of the importer. On the other hand, since it is easier for the importer to adjust his sales price than for the exporter to change his cost price, the exporter will have stronger preferences for his national currency than the importer.

Donnenfeld & Zilcha (1991) build a more complicated model where they assume that the exporting firm has monopoly and that decisions on output, pricing and sales are made sequentially. The results indicate that the decision of the exporter relies on the prior distribution of the random exchange rate.

Whereas under a floating exchange rate regime, the value of the currency is simply determined by prevailing demand and supply conditions, in a fixed exchange rate regime the value of the currency is officially defined in terms of other currencies. When the authorities define the exchange rate parity by using a certain currency, the currency is used by the public sector as a unit of account. It should be noted that the public use of a currency as a unit of account can be latent in the sense that the definition of the exchange rate parity does not have to be transparent. There are countries who have an informal peg to a currency which is not known. In such cases, the determining factor is the de facto area of influence of the currencies that are of importance for the country. There are also several countries pegging their currency to a basket of other currencies. Very often the basket reflects the trade pattern of the country, but there are also cases where the composition of the basket is not announced. In both cases it is, of course, ambiguous to say, which currency is actually used as the international unit of account.

### 1.1.3 Store of value

If a currency is fulfilling the function of acting as a store of value, it is used as a means of holding wealth. An international store of value is involved whenever assets are held denominated in a currency other than that of the country of the holder.

A measure for the store of value function of a currency in the private sector is its use for denomination of international bonds, deposits and loans. In other words, a currency fulfills this function if the private sector prefers to hold its wealth in that particular currency.

Similarly, a currency fulfills its store of value function in the public sector, if the authorities choose to have their official reserves in that respective currency. This public function is, in turn, closely related to the choice of the main intervention currency, and consequently also to the choice of the exchange rate regime of the country.

#### 1.1.4 Links between the different roles

These fundamental functions are highly dependent on each other. Often, if an agent chooses a currency to fulfill one of the functions, he implicitly uses the currency chosen also in another role. The links appear to be practically indistinguishable in the public as well as in the private sector use of an international currency.

Although the relevance of the means of payment function is of relatively minor importance in the end, given the small share of commercial transactions in total foreign exchange turnover, international money probably begins as a means of payment. When concerning the means-of-payment function and the unit-of-account function, there is no logical necessity for them to be shared by the same currency. This becomes clear when one thinks of the currency fulfilling the former function as a concrete object, whereas the currency used for the latter purpose can be thought of as an accounting abstraction. In practice, though, these roles are closely linked together, because there are obvious advantages in using the same currency both as a medium of exchange and as a unit of account. Thus, the most widely used currencies for transaction purposes tend also to be most extensively employed for quotation purposes. Therefore, for example, most empirical studies use payments data and invoicing data interchangeably and assume them to be comparable. Likewise, the most widely used transaction currencies tend to be most extensively held for store of value purposes. All transaction currencies are, though, held as stores of value to some extent.

In the relationship between the medium-of-exchange and store-of-value functions, if a currency is used as a means of payment, it is necessarily also used as a store of value. In order to be able to use a currency for transaction purposes, that currency must necessarily be held, at least temporarily, as a reserve of existing purchasing power. On the contrary, there is no logical necessity for a store of value to take on the role of means of payment.

Although a theoretical analysis of the roles in separate is possible, the interdependence of them in practice has become circular. Because in today's world only a small proportion of international financial transactions consists of commercial transactions stemming from trade flows, the usefulness of a money as a good itself has gained importance. This has strongly diffused the hierarchy between the different roles of an international currency.

## 1.2 Conditions

The choice of currencies to be used for international transactions is the result of the decisions of several distinct groups of economic agents. The reasons for the decisions taken can differ quite widely since they are the solutions of individual agents. However, in order to be considered in the decision making of these international agents, the currency must fulfill some preconditions. When serving as a medium of exchange, the supply of the international currency is important. The key currency must be available in the rest of the world. In turn, when the currency is serving as a store of value, naturally its stability in value is crucial as well as confidence in its continuing value is a necessity for its efficiency and continuance as a key currency. This implies that before a national currency can be promoted to an international currency, some fundamentals must be fulfilled. These are the stability property of the currency, the financial market structure in the issuing country, and the transaction domain of the currency.<sup>3</sup>

### 1.2.1 Stability

A precondition for a currency to become an international currency is that it predictably maintains its value over time. Confidence in the stability of a currency is determined mainly by its inflation record. A high or volatile inflation rate does not only add to the costs by generating nominal depreciation or variability of the exchange rate, but also increases the costs of holding the currency by eroding its purchasing power. Therefore, the safest currency for all investors regardless of their country is the currency of the country with the lowest and least unpredictable inflation.

Confidence in the stability is also influenced by the policy stance in the issuing country. Transactors have to be convinced that convertibility remains unqualified, which requires confidence in both the solvency and the liquidity of the issuing country. Therefore, currencies of countries with low and stable inflation, and with a credible monetary authority are prime candidates for international use.

### 1.2.2 Financial markets

Crucial for the potential of a currency to become an international currency is the structure of the financial markets of its home country. Obviously, investors prefer to acquire assets in the countries with the best-organized and most efficient financial institutions and markets. A smooth use of the currency requires markets that are open, broad and deep enough to provide economies of

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<sup>3</sup> Thorough theoretical presentations of the properties of international currencies are Cohen (1971), Klump (1989), Tavlas (1991) and Van het dack (1992).

scale and a wide variety of instruments.<sup>4</sup> This condition is largely self-fulfilling: once the use of a currency increases, the market develops, and the more convenient it is to use that currency. Therefore, once a currency provides a liquid and deep money market, and enjoys the role of the major international currency, it is very hard for other currencies to replace it.

### 1.2.3 Transaction domain

The transaction domain of an international currency depends mainly on world trade patterns. The need to switch between currencies and, consequently, the ensuing transaction costs can be substantially diminished, if the actor adapts his own currency mix to that of the other actors, holding as international exchange media of the most widely used foreign currencies. Quite naturally, thus, the choice of currency tends to concentrate on the international exchange media of the countries most predominant in international trade.

Beyond this, there are some stylized facts describing the determination of the transaction domain of currencies. Empirical findings suggest that the exporter usually determines the choice of invoicing currency. Another feature is that trade in homogeneous primary products is generally denominated in a major vehicle currency, whereas trade in manufactured goods is mainly denominated in the currency of the exporting country. This difference can easily be explained by competition aspects. Since primary products do not have any firm- or country-specific features, price is the only factor affecting the demand of an individual seller. Thus, in order to make price comparison easy, trade is invoiced in one currency. The currency to be used as unit of account is then determined by the country who is the largest exporter, the largest importer, the largest broker, or all of them, of that particular product. Also, trade between industrialized and developing countries is mostly denominated in the currency of the industrialized trade partner. These results indicate that the larger the share of a country in international trade, and the more diversified its exports, the greater the likelihood that its currency is used for invoicing.<sup>5</sup>

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<sup>4</sup> In Cohen (1971), a means of payment is defined by describing it as the asset with the lowest transaction costs. In an even earlier study, Yeager (1968) points out that ambiguity about the lowest transaction costs could explain the coexistence of two or more mediums of exchange. Each might have the lowest transaction costs in some types of transactions.

<sup>5</sup> See van Leuvensteijn (1994) for a compact survey of the literature, and Tavlas (1991) or Van het dack (1992) for a discussion on the stylized facts.

## 2 Potential benefits and costs of an international currency

It was said earlier that the development of a currency to an international currency is demand-determined. Hence, a government or a central bank cannot easily promote an international role for the domestic currency. To quote Mundell (1992): "International monetary systems do not change without warning; the rule is evolution and transition, not revolution" (p. 11). A country can only improve the exchange convenience and credibility of the domestic currency, these conditions being basically a function of the size of the country, the structure and magnitude of its trade and the efficiency of its financial markets. They can, though, be directly affected only marginally through official policy actions. Only when market demand exists can the country indirectly affect the evolution of its currency to an international currency through strengthening the underlying conditions.

But if there is little a country can do to introduce its national currency as an international currency, also the ability of the country to reduce or eliminate the international roles of a currency, once they have started to accumulate and grow, gradually declines. Because it is difficult to stop the self-revolving spreading of an international currency, it should be considered what could be the benefits and costs of being the issuing country of an international currency. It might turn out that it would be costly for such a country to be the source of the key currency. Even though it is not possible to make the currency the dominant one by supply policies if there is no corresponding demand to be met, it is possible to prevent a demand-driven spreading of the currency by limiting the supply. (The potential benefits and costs, that are discussed in this section, are summarized in table 2 on page 19.)

### 2.1 Impact of exchange rate arrangement

In a world with fixed exchange rates and freely mobile capital, the exchange rate will be a constraint to domestic economic policy making. Under a floating exchange rate system, economic policy actions can more freely be directed towards domestic targets, because the exchange rate adjusts. In practice, however, if spill-over effects and competitive exchange rate movements between currencies are to be avoided, the use of domestic policies is limited to some extent even under floating exchange rates. The more open the economy is, the more important is the constraint.

#### 2.1.1 Potential benefits and costs under floating exchange rates

Under floating exchange rates, the benefits of being the issuer of the key currency are the larger, the more dominant the position of the currency. There are two main sources of benefitting from the key currency position. Firstly, since a large share of international trade is invoiced in the key currency, the exporters and importers of the issuer country will only seldom have to bear the

exchange risk in commercial transactions (point 1 in table 2). Alternatively, since it would be possible to hedge any exchange rate risk for most trade contracts, the domestic exporters and importers save the costs for hedging.

The other beneficial effect is that being the nominator of world exchange rates, the key currency cannot so easily be the objective of bilateral speculation (point 2a in table 2). If a speculator wants to take a view predominantly on the likely development of the key currency, he must trade the key currency against a basket of other currencies. It is not possible to affect the value of the key currency by speculating on a single bilateral exchange rate between the key currency and a smaller currency. In such a case, it is always the value of the smaller currency that is affected more. On the other hand, the integration of world financial markets has made it possible to have a global run, especially under turbulent circumstances, even on key currencies. Moreover, if all the speculative transactions between the smaller currencies and the key currency are added, there will be a net effect on the value of the key currency. A large number of such transactions can make the exchange rate of the key currency volatile and weaken the link between the value of the key currency and the underlying domestic economic fundamentals (point 2b in table 2).<sup>6</sup>

The costs of being the issuer of the key currency under floating exchange rates stem also from foreign exchange dealing activities. Trading diminishes the ability of the domestic authorities to steer the value of the key currency (point 3 in table 2). The exchange rate of an international currency is determined by the supply and demand conditions on world markets and does, consequently, not reflect solely the balance-of-payments situation of the issuing country (point 4 in table 2). As an example, let us consider a situation where the key currency country would like to see its current account deficit diminish, either as a result of or through a depreciation of its currency (point 5 in table 2). The capital flow, or intervention, needed to induce the exchange rate change would have to be remarkably larger than would be the case if the country would issue a small currency, because the larger is the volume of the market, the smaller is the effect of a given capital flow on the exchange rate. In such a case, the investors might not be willing to move such large amounts of their key currency holdings, which behavior weakens the link between the value of the key currency and the macroeconomic developments in the issuing country.<sup>7</sup>

### 2.1.2 Potential benefits and costs under fixed exchange rates

The issuing country can lose effective control over its own exchange rate even under a fixed exchange rate regime, if the currency is used as unit of account to express exchange rates. If the pegging countries want to maintain the relationship between their national currency and the unit of account, they will always realign their currency into the opposite direction, and there is nothing

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<sup>6</sup> For a further and very clarifying discussion on the special role of the key currency in foreign exchange trading, see Brown (1979).

<sup>7</sup> Rather, there is a link between the course and credibility of domestic economic policies and the exchange rate. This will be discussed in section 2.2.2.

the issuing country can do about it. The exchange rate policy of the key currency country will always be the objective of international economic policy debate, and requires, in order to be successful, the agreement of the countries using the key currency as the nominator of their peg (point 6a in table 2). This cost depends, of course, on how many countries choose to peg their currency to the international currency. On the other hand, because of its economic importance, the issuer of the key currency has superior bargaining power in negotiations (point 6b).

## 2.2 Impact of world liquidity factors

The benefits and costs accruing to the country issuing the international currency also depend on world liquidity needs.<sup>8</sup> Theoretically, the demand for reserves has been explained as a function of the variability of international payments: international reserves have been seen as a buffer stock accommodating fluctuations in external transactions, the demand being positively depending on the extent of the fluctuations. As a consequence, the need for international liquidity depends on the exchange rate regime applied in the international monetary system. The more weight is put on the stability of the nominal exchange rates, the more important is the liquidity question. In contradiction to theoretical reasoning, however, countries have continued to hold and use international reserves despite of the switch to a floating exchange rate regime. Instead of letting their exchange rates float freely, countries have chosen to manage them.

Gold and foreign exchange reserves are accountable sources of international liquidity in the sense that they have statistical coverage. This "accountable" stock of world liquidity is supplemented by the capacity of the international monetary system to create international credit. The development of the international capital markets has enabled countries to more and more rapidly supplement their reserve holdings by borrowing from the private sector. This implies that the adequacy of international liquidity is determined not only by the recorded holdings of official reserves but also by the degree of access to private and official sources of liquidity. Hence, a "sustainable" balance of payments position can be defined as a current account deficit that could be financed by spontaneous, that is, voluntary capital inflows over the medium term.

If the integration of world capital markets has weakened the link between the supply of a given reserve currency and the existence of a balance-of-payments deficit in the country issuing that currency, not only the need of but also the consequent political disapproval of running a continuous deficit is reduced. This benefit is further strengthened by the tendency of the authorities to diversify reserve holdings, thus diminishing the burden of one single country having to provide all international liquidity.

Even if liquidity can be readily obtained from world capital markets, this possibility prevents shortages of reserves only in the short to medium term.

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<sup>8</sup> For a discussion on the liquidity on the international monetary system, see e.g. Scammell (1975), Padoa-Schioppa (1988) or Henning (1991).

Obviously, not every country can increase its indebtedness for ever, but periodic refinancing is necessary. Hence, in the long run, only the size of the required deficit of the key currency country is relatively smaller. From the policy perspective, it follows that the problem concerning the provision of international liquidity still is relevant, although it is not as urgent as it has been in the past.

### 2.2.1 Provision of liquidity

Provision of international liquidity is beneficial in the sense that the country issuing a key currency may over time even be able to run a greater cumulative trade deficit than would otherwise be possible (point 7 in table 2). Since adequate world liquidity has to be supplied in the long run, the issuer country of the international reserve currency has to provide the markets with its currency to meet the demand. Thus, when a currency begins to be used internationally, the country issuing may be able to finance payments deficits through voluntary accumulation of liabilities abroad. When the issuing country of the international currency supplies official reserves, it runs a balance-of-payments deficit towards other countries. There is either an increase in trade or in the capital flows, or both. Hence, through the international currency, the country increases its real national absorption relative to real national income.

This benefit may be reduced, if the increase in real absorption leads to a worsening of the terms of trade of the key currency country. The external deficit of the issuer country enables its trade partners to attain higher levels of real national income and capital formation, because they are able to export more to the key currency country. The income of the issuing country may be raised or lowered, depending on whether faster economic growth abroad improves or worsens the terms of trade of the issuing country.

Because of the special role of a key currency, international investors and borrowers are more willing to hold the currency, which may give the issuing country more time and scope to deal with a payments deficit. The gain from the current increase of real absorption made possible by the cumulative deficit in the balance of payments ceases to accrue as soon as foreigners stop acquiring additional assets denominated in the country's currency. The yield on the additional investment of resources abroad made possible by the deficit, on the contrary, is not bound in time to the deficit. In fact, the resources may actually have been invested much earlier in the country's economic history. The benefit stops to accrue only when the borrowed capital is repatriated.

### 2.2.2 Economic policy

The availability of international liquidity is crucial for the analysis of the costs and benefits of an international currency for the economic policies pursued by the issuer country. If liquidity is scarce without the actions of the country issuing the international reserve currency, that might affect the ability of the country to conduct economic policies directed to meet domestic targets (point 8 in table 2). Under the Bretton Woods system, in which exchange rates were fixed and capital was remarkably less mobile than in the modern world, the

economic policy of the key currency country was clearly influenced by the special position of its currency. Then it was necessary for the spreading of the currency to run balance-of-payments deficits in the key currency country, which made the country issuing an international currency subject to the possibility of reduction or withdrawal of these past foreign accumulations of its currency. Such a threat could sometimes limit the authorities' ability to use domestic monetary and fiscal policies freely to maintain the optimal level of resource utilization.

Table 2. **Potential benefits and costs of an international currency**

	Benefits	Costs
Floating exchange rates	No exchange rate risk to bear in foreign transactions / no cost of hedging (1)  Bilateral speculation difficult (2a)	Possibility of misalignments (4)  Volatility due to the added effect of speculation (2b)  Management of the exchange rate through intervention more difficult (3)  If having a current account deficit, may be stuck with an overvalued currency (5)
Limited exchange rate movements	Bargaining power in realignment situations (6b)	Change of agreed rate becomes a global political issue (6a)
Obligation to provide world liquidity		Deficit constraints economic policy (8)
No liquidity problem	Increased real absorption possible on a voluntary basis (7)	
In general	Lower transaction costs due to larger trading volumes (10)  Increased banking activity (11)  Seigniorage (12a)	Eventual loss of the control over the money supply (9)  Interest payments on assets held by foreigners (12b)

The economic policy of the issuing country could also be limited qualitatively. The qualitative effects can be measured in terms of the gain or loss of degrees of freedom in the economic policy palette. Namely, there could be policies that would be required to preserve any of the other necessary conditions of an international currency, but that also either are or could be at the expense of domestic income and employment levels.<sup>9</sup>

It should be noted that under such circumstances where the liquidity constraint applies, the flexibility benefit and the constraint cost accruing through public policy tend to apply sequentially rather than simultaneously. Early in the evolution of an international currency, when potential holders have no doubts about its soundness, the flexibility advantage is likely to predominate; later on, when liabilities and consequently doubts accumulate, the constraint disadvantage is likely to predominate. Hence, international currencies generally start off strong when they are still scarce in world markets, but end up weak as they are expanded beyond the point of satiety.<sup>10</sup>

The integration and liberalization of world capital markets has changed the channel through which the economic policies of the issuing country are constrained. Utilization of private capital for short- or medium-term liquidity needs has, however, diminished the responsibility of the key currency country to be always ready to supply any amount of international reserves. In the modern world, however, the important criterion is not whether a country records net capital inflows or outflows, but whether these affect confidence in a currency, which, in turn, affects the solvency of the country. Hence, the constraint stems rather from managing the creditworthiness of the country, i.e. the maintenance of the long-run credibility of sound economic policies. As long as sound economic policy-making convinces the markets of the long-run solvency of the country, it will have access to liquidity through the international private capital markets and, thus, avoids (short- to medium-term) financing problems.

Being forced through market behavior to conduct sound economic policies can hardly be regarded as a cost; nor should it be regarded as a benefit stemming from the role of the issuer country of an international currency. Once economic policy is correctly tuned, and it is credible, that will show as confidence in the sustained stability of the currency of the country. Due to the effects of scale and hysteresis, though, this requirement is less strict for the issuing country of the key currency.

The fact that markets are able to create international liquidity by themselves may invoke the cost of losing control over money supply for the country issuing an international currency (point 9 in table 2). Large and eventually volatile flows of currency abroad make the assessment of money growth more difficult, as they can only be measured imprecisely. This, in turn, complicates the objective of the central bank to meet a certain inflation target.

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<sup>9</sup> If the prevailing monetary system is a hegemonic one, then there is the danger that the issuing country is reluctant to undertake leadership obligations that involve changes in the policies it would otherwise wish to pursue. In such a case the surrounding countries easily feel frustrated by their inability to affect the decisions of the hegemonic country, and seek ways of exerting leverage over the centre country.

<sup>10</sup> This phenomenon is known as the Triffin dilemma, originally described in Triffin (1961).

## 2.3 General potential benefits and costs

There are some benefits and costs that are accruing to the issuer country of the dominant international currency independent of the ruling formulation of the international monetary system. Benefits and costs arise from larger volumes in financial as well as commercial transaction flows denominated in the dominant currency (point 10 in table 2).

### 2.3.1 Banking activity

When a currency begins to be used internationally, an increased number of commercial and financial transactions will most likely be executed through banks or brokers in the issuing country, given that the financial market of the country fulfills the efficiency requirement (discussed in section 1.2.2). Therefore, a direct benefit of an international currency stems from the earnings of the banking sector and its activities (point 11 in table 2). The larger volumes strengthen the economies of scale effect, and transaction costs are further lowered for both domestic and foreign actors. The larger volumes also accelerate a further development of the secondary markets, and as a result, when the variety of financial instruments increases, financial management becomes even more efficient. Also, banks' incomes from collecting fees increase because of the increased activity.

There is another net benefit through private economic units for the issuing country of an international currency. It is the difference between the gross earnings on additional financial and commercial services provided to foreigners and what the earnings on these services would be in their next-best alternative domestic use. Namely, once the demand for national banking services rises, gross earnings of other financial and commercial services are likely to rise as well, as foreigners become more aware of what facilities are available.

### 2.3.2 Interest payments

Theoretically, the issuer-country of an international currency may also benefit from international seigniorage (point 12a in table 2). However, according to several empirical studies on as well the GBP as the USD, in practice, the seigniorage extracted has been negligible. It is reduced by the interest paid by the issuing country to foreigners on their accumulated assets (point 12b). The magnitude of this cost depends on the monopoly enjoyed by the country as an issuer of international money. The stronger the monopoly position, the smaller will the offsetting interest cost be. Vice versa, if there are several countries issuing an internationally used currency, then higher interest payments are required to retain the accumulated balances.

### 3 Determinants of the potential of the ECU to become an international currency

After the presentation of the theory, we shall proceed to consider the factors affecting the potential of the single currency ECU to become an international currency. In the discussion, we shall also try to draw some lessons from some real-world observations. Previous experiences with internationally used currencies (USD, GBP, DEM, JPY) have shown that several developments can be identified that together imply a growing role for an international currency. Firstly, the importance of a currency has increased as a result of a stable inflation performance and a credible monetary policy. Secondly, a wide menu of financial instruments and lifting of capital controls has increased the popularity of the currency. Finally, a growing share in world trade has resulted in an increased use of the currency.

It should be born in mind that the establishment of major international reserve and vehicle currencies is a very slow process. The emergence of such currencies is a process that is driven mainly by economies of scale associated with foreign exchange and the consequent reduction in transaction costs. The appearance of these factors, in turn, depends on the importance of the issuing economy for world trade and investment. Though, history and hysteresis are significantly involved in the process, too. The evolution of a currency to a major international currency is always affected by self-justifying believes. Economies of scale result in an increasing use of the currency, as increasing use reduces transaction costs further, inducing yet greater use of the vehicle.<sup>11</sup> As Alogoskoufis & Portes (1990) note, only a large shock that causes significant disruption in the world monetary and trading system, could result in a speedy spreading of a new international currency. If market agents become convinced in the general acceptability of a currency, then it will be accepted; otherwise not.

#### 3.1 Stability

When agents are making the decision on the choice of a currency, they will consider the risk that the value of the currency could change. A currency could lose purchasing power because of a change in the domestic price level, in the nominal exchange rate, or in both. Therefore, over time, the degree to which the ECU competes with the USD as an international currency is likely to depend on the stability of the purchasing power of the two currencies. The drawback is that the ECB does not have a history of credible monetary policy. The inflation record of the single currency ECU starts to augment only from the day the ECU is declared the single currency in the EU. It will, inevitably, take some time for the ECB to establish the credibility in implementing policy commitments.

The speed of the process determining the role of the ECU depends on how firmly the conditions for the use of the ECU as an international currency can be

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<sup>11</sup> See Black (1991) for an analysis of the use of vehicle currencies.

developed during Stage II. This depends very much on the monetary policy framework that the European Monetary Institute (EMI) is able to define in the end of Stage II, and on the environment where the single monetary policy is to be conducted.<sup>12</sup> Hence, a way to promote the stability characteristics of the single currency ECU in advance is to formulate the institutional framework so that the European Central Bank (ECB) would have all preconditions to conduct a credible anti-inflationary monetary policy. The monetary constitution embodied in the Maastricht Treaty lays the foundations of credibility by setting price stability as the primary objective of the monetary policy of the ECB. Also, the ECB and the national central banks are guaranteed an independent position in monetary policy decision making. The Statute of the European System of Central Banks (ESCB) provides the broad guidelines for the operation of the future monetary policy. Even if a certain degree of generality is required to avoid prejudging matters, there are some key issues that can already be identified.<sup>13</sup> Solving them is necessary to convince the markets as soon as possible on the credibility of the monetary policy conducted by the ECB, and consequently, on the stability of the single currency ECU. If the ECB succeeds in achieving the price stability objective, then the ECU could come to displace the USD, at least in part, as the foreign currency preferred.

So far, the stability aspect has been discussed in terms of real internal risk. However, political risk should also be considered. Political risk measures the probability of a borrower being forced to default because of the imposition of exchange or other controls by a political authority. Hence, the conditions for the single currency ECU to become an international currency can be improved also by strengthening political stability in the EMU area, which for its part makes the commitment to liberalized financial markets credible. Within the EU, this should be a naturally expected development.

### 3.2 Financial markets

The more homogenous the national financial markets can be made before the transition to the single currency, the better will the ECU market function from the very beginning. The preparatory work should be carried out in such a way that, institutionally, it could be guaranteed that the financial markets for the single currency ECU will function at least as efficiently as the markets for the national currencies. For international investors, the choice of a currency depends on expected relative rates of return. In turn, such rates of return depend in part of the depth and liquidity of the underlying market. Therefore, the liquidity and depth of the money market for a reserve currency is extremely important. In devising a strategy for promoting the ECU market, one should

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<sup>12</sup> The European Monetary Institute is a continuation of the cooperation between the central banks of the Member States. The existence of the institute will end with the establishment of the European Central Bank. Together with the national central banks, the European Central Bank constitute the European System of Central Banks, which will assume responsibility for monetary policy in EMU. For details on these institutions, see the Treaty on European Union.

<sup>13</sup> Such issues are addressed in e.g. Monticelli & Viñals (1992).

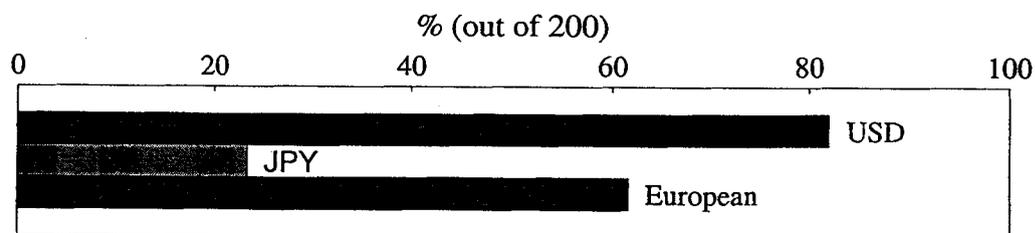
should consider which segments are crucial for the single currency to fulfil the preconditions for becoming, as soon as possible after its introduction as the single currency, an international currency.

Clearly, the market for the ECU will be thicker than the market for any of the current EU currencies. But if the ECU is to play an important role as an international reserve asset, it must be made more fully usable as means of international payments. Also, for both the interbank market and the non-bank private sector the ECU will not be that easily adopted unless banking in it is as cheap as the alternatives. This in turn depends on the success of further financial deregulation in bringing down the cost of banking in the EU. One important aspect in the smooth functioning of the financial markets is the existence of an efficient clearing system. When the ECU is introduced as the single currency, the ECB and the national central banks will be in charge for the smooth operation of the payments system. It must be possible to transfer money easily, cheaply and quickly between Member States.

### 3.3 Transaction domain

The transaction domain for the single currency ECU within the EU has to be inherited from current EU currencies. As the single currency, the ECU replaces the DEM and other European currencies, and evidently becomes the second most important currency in the foreign exchange market. The ECU market should, by definition, be thicker than the market for any of the individual EU currencies. As a consequence, economies of scale should rapidly benefit the international use of the ECU, making it an efficient medium of exchange.

Figure 1. Share of European currencies in forex turnover



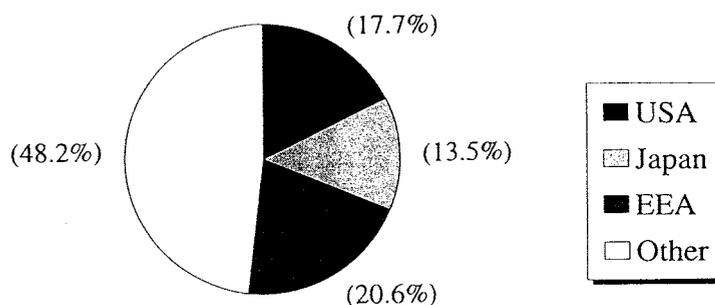
Note: The share of EU currencies is overestimated because it includes intra-EU transactions

In the foreign exchange market, the ECU could also gain from the change in the invoicing pattern. If EU trade is invoiced in ECU, also its use as means of payment in international transactions will most probably increase. It should be noted that the change of invoicing currency in *intra*-EU trade does not have any direct

Given the trade pattern, illustrated by figure 2, where the EU counts for 20.6 % of world exports (intra-EEA trade excluded), once the ECU becomes the single currency in the EU area, over one fifth of world trade would involve

a trading partner with the ECU as domestic currency. Given that, and given the fact that, in 1992, 33.5 % of world exports were denominated in major European currencies (DEM, FRF, GBP, ITL and NLG) against the share of 47.6 % of the USD, there should be no doubt that the trade fundamentals are very favourable to the single currency ECU.

Figure 2. **Share of world exports 1992**



Source: Koolwijk (1994)

It should be noted that the final spreading of ECU usage for invoicing will also depend on the breakdown of EU trade between exports and imports. Generally, exports are more likely to be denominated in the home country's currency than are imports. Ilzkovitz (1994) and Johnson (1994) provide empirical evidence for that the principal currency used for the denomination of national exports is, indeed, the national currency, whereas national currencies are used less to denominate imports.

The practice that trade between industrialized and developing countries is mostly denominated in the currency of the industrialized trading partner could be a factor promoting the usage of the ECU, because EU countries trade more than other industrialized countries with developing countries. On the other hand, developing countries often export primary goods that are invoiced usually in the USD. Though, the phenomenon that homogenous primary products are generally denominated in a major vehicle currency is sometimes seen as a potential of the ECU to spread. According to this argument, if EMU trade with developing countries will be mainly denominated in ECU, and since the traded goods are very often primary goods, then the usage of the ECU as invoicing currency for primary products could become practice even globally.

If the ECU is to become a major international currency, strengthening the transactions domain would be of great importance, though. The size of a currency's transactions domain plays a crucial role for its ability to absorb shocks in the system as a whole. The larger the share of the currency in international transactions, the smaller the burden of adjustment falling on the country issuing the currency.

transactions, the smaller the burden of adjustment falling on the country issuing the currency.

### 3.4 Inherited features

Before starting the discussion on the development of the single currency ECU in world foreign exchange markets, it should be noted that the outcome does not depend only on the potential of the ECU to become the international currency, but also on the position of the USD as the ruling international currency. There is no empirical evidence for that, currently, a tripolar international monetary system would exist. As shown in a recent study by Ilzkovitz (1994), the USD undeniably still is the dominant currency in the international foreign exchange markets, although its share has decreased. The DEM, on the contrary, has increased its share. This is to a large extent a reflection of the growing importance of Germany in world trade, but is certainly also due to the monetary integration in Europe. On the one hand, there is the large intra-EU trade that promotes the commercial use of the DEM, the currency of the largest economic power in the area. On the other hand, there is the EMS arrangement that has resulted in an increase in the use of the DEM as a reserve and intervention currency in other EU countries. The JPY does not play a major role in the international foreign exchange markets.<sup>14</sup>

Johnson (1994) analyses the effect of the EMS on the USD and draws conclusions on that basis on the implications of the EMU for the USD. She concludes that over time, the EMU has the potential to have an effect on the different dimensions of the international role of the USD. There is the possibility of the USD to weaken because of the large external US deficit. Earlier in the evolution of the USD as the key currency, the trade deficit was a desired phenomenon. After the USD had been a scarce international currency for a few decades, the worsening of the US balance of payments (in the late 1950s and in the 1960s) created an appropriate condition to a key currency: an adequate supply of the currency was ensured, while convertibility accompanied by vast reserves retained the confidence in the currency. However, after having had a large deficit for a quarter of a century by now, a prolonged policy of "benign neglect" of the deficit might one day create a confidence crisis. As Padoa-Schioppa (1988) and Alogoskoufis & Portes (1990) state, this foreign borrowing of the USA may hasten the decline of the USD as the leading reserve currency and cause currency instability. USD weakness would, of course, improve the chances of the ECU to substitute for the USD in international transactions and portfolios.

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<sup>14</sup> Black (1991) reports similar results and reports that the relative attractiveness of the USD as a vehicle currency has declined moderately, whereas the share of the DEM has increased remarkably. The JPY has hardly changed its relatively moderate role in world markets. Frankel & Wei (1993) analyze whether countries try to stabilize their currencies in terms of a particular major currency. For East Asia they found that not the JPY but the USD is dominant. Tavias (1991) explains the little role of the JPY by the fact that Japanese financial markets were until recently rather tightly regulated. The restrictions inhibited the use of the JPY as an international currency.

It is by no means yet self-evident that the USD would be replaced by the ECU international currency. The size of the market for the USD is so large that the economies of scale are big enough to sustain even hard pressures on the USD. Even though the USA has every now and then been criticized for its current account deficit, it has had relatively few problems in financing its current account deficits. It would require several incidents to occur simultaneously for the USD to fall. Increased inflation risk, worsening of the current account or diminishing of the importance of the USA in world trade cannot alone lead to abandoning of the USD. Practice has shown that the flexibility of the USD financial markets and the confidence in the country's essential political and economic stability make people willing to buy USD.

Because of the substantial hysteresis involved in the process, the USD still retains the prime position in the international monetary system. It is in the interest of the rest of the world to maintain that deficit and the key currency USD. From the traders' point of view, it is probably not in the interest of non-US exporters to see a rapid or severe correction of the current account of the USA.<sup>15</sup> From the investors' point of view, it could be difficult to find an alternative place to invest the present surpluses of the major trading partners.

#### 4 Costs and benefits of international currency ECU for EMU<sup>16</sup>

Assuming that the prerequisites for the full potential of the single currency ECU to become internationally used are fulfilled, it is of interest to turn to a discussion on the possible consequences on EMU of such a role of the ECU. The costs and benefits accruing to EMU from the international use of the ECU depend, first of all, on the position of the ECU in the international monetary system. If there is a tripolar system where the USD still dominates, and the ECU and the JPY are international but not key currencies, the effects from the spreading of the ECU will be relatively smaller than if the ECU would share the major currency position.

The potential benefits and costs of a single currency ECU are presented in sections 4.1 through 4.6 and summarized in table 3 on page 29. Section 4.1 discusses the benefits accruing through larger trading volumes in ECU. Section 4.2 focuses the channels to supply ECU denominated assets to the markets. Section 4.3 presents the potential benefits and costs from the task of providing international reserves to the world. Section 4.4 analyses the cost of losing full control over the money supply when the ECU is serving as an international currency. Section 4.5 discusses the potential benefits and costs of the international currency ECU accruing through exchange rate management. Finally, in this study a development path is chosen in which the relative

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<sup>15</sup> It should be noted that a reduction of the trade deficit of the USA would necessitate stronger growth performance in other major economies. For a further discussion on the trade deficit problem of the USA, see e.g. Cooney (1987).

<sup>16</sup> This question has been basically addressed in *Commission of the European Communities* (1990). Goodhart (1993) provides a discussion of the results of the Commission study.

positions of the USD and the ECU become more symmetric. Section 4.6 emphasizes what potential consequences the rise of a more symmetric international monetary system could have for global exchange rate development. For the meaningfulness of this study, let us assume that the single currency ECU is going to develop to an international currency parallel to the USD. To which extent this will happen depends on several factors. The conditions described in sections 3.1 through 3.3 can be considered as the potential of the ECU to become widely used. Throughout the discussion, the assumption is applied that integration and liberalization on a global level will remain at the current level or deepen, but not decrease.

#### 4.1 Economies of scale

The greater role of the ECU would make also the European foreign exchange market deeper and more efficient, enforcing the economies of scale (point 1 in table 3). As reported in Black (1991) and Tavlas (1991), a vehicle currency will emerge whenever indirect costs – including costs of information, search, uncertainty, and enforcement – through the vehicle are less than direct exchange costs between two non-vehicle currencies. A larger ECU foreign exchange market would yield economies of scale and, consequently, diminish the advantage of using the USD as a vehicle currency in transactions between the ECU and third currencies. Transaction costs would be lowered not only because of larger volumes but also because of a decrease in information costs as foreigners become familiar with the currency. According to Kenen (1993), there are two explanations for that. Firstly, a concentration of EU foreign exchange trading from a number of national currencies to the single currency should cut the costs of trading in ECU. He argues that the main cause of the decrease in cost – and consequent increase in volume – may be the reduction in the need for a vehicle currency resulting from the fall in the number of currencies traded. Secondly, the introduction of the single currency should diminish the basic advantage of using a single vehicle currency. That would challenge the current pivotal role of the USD in the foreign exchange market.

Another benefit stemming from the wide-spread use of the single currency ECU would come about through trade. Given that the choice of currency tends to concentrate on the money of the country more predominant in international trade, domestic traders could pass the exchange rate risk to foreign traders. Alternatively, if the ECU is more often used as the currency of denomination, domestic actors could pass the cost of hedging to foreign actors (point 2 in table 3).

Table 3. **Potential benefits and costs of the international currency ECU for EMU**

Benefits	Costs
Lower transaction costs (1)	Chronic surplus, appreciation and danger of currency competition (3)
No exchange rate risk / no hedging cost (2)	More difficult to control money supply (5)
Increase in real absorption (4)	More difficult to control the exchange rate by intervention (6)
Bargaining power in negotiations (8a)	Realignment of peg becomes a global policy issue (7)
	Danger of exchange rate instability (8b)

## 4.2 Balance of payments: from surplus to deficit

In a world with EMU, the buildup of ECU balances outside the EU area depends, generally taken, on the direction of capital flows. In the beginning, EMU would be running a current account surplus inherited from the Member States. Since the international importance of the ECU will be greater than that of the EU currencies combined, it is quite likely that there will be an increase in the demand to hold ECU-denominated assets. Therefore, a prolonged surplus would render the ECU scarce and impair its reserve role. Because of a chronic surplus, the ECU would appreciate over the long term. That, in turn, could lead to currency competition. Since competition between currencies is likely to lead to big portfolio shifts, which can be very destabilizing, there might be an urgent need for global monetary cooperation (point 3 in table 3).

Over time EMU would have to move from surplus to deficit in order to match world demand for ECU. At this stage of the evolution, EMU would gain from the use of the ECU as an international currency, by being able to run an otherwise excessive current account deficit (point 4 in table 3). Klump (1989) and Goodhart (1993) stress that such a current account deficit should be the result of an excess of private sector investment over saving, and not stem from a corresponding public sector deficit. They further point out that even if the deficit would be due to excessive private investment, it will matter whether the excess investment arises from higher investment or from lower saving. If economic strength is to be maintained, domestic investment must grow faster than domestic saving.

## 4.3 Provision of liquidity

A potential cost of having a prolonged balance-of-payments deficit would be that it could restrict the freedom of the key currency country to conduct economic policies that would be needed for domestic reasons. The intensity of such a cost to accrue depends on the availability of international liquidity.

Given the functioning of modern and integrated international capital markets, the need for the issuer country of an international currency to provide liquidity is not as pronounced as in the past. As was discussed in section 2.2, private markets can create international liquidity as long as the system remains credible. The ability to obtain short- to medium-term liquidity through borrowing in the capital markets significantly diminishes the drawback of having to be the lender of last resort. Thus, the more willing private agents are to create (offshore) ECU-denominated credit, the smaller will be the need for EMU to run a large balance-of-payments deficit in order to promote a rapid international spreading of the ECU. However, there must be an initial deficit in order to provide the markets with starting capital.

This ability of the international financial markets to supply themselves lessens the burden of the issuer countries of having to run current account deficits for world liquidity reasons. Increased offshore investment activity enables a country to be a capital exporter at the same time as it is the issuer of a major international currency. A lasting current account surplus can serve as a promoting mechanism for the international use of a nation's currency since it is a sign of economic strength. From a policy perspective, monetary policy in EMU is clearly directed to maintaining price stability and can therefore not be assumed to be used for short-term stimulation purposes anyway. Fiscal policy,<sup>17</sup> in turn, is restricted by the convergence criteria and the broad economic policy guidelines regularly set and observed by the Council. Also, since there is no single European fiscal policy but a number of national fiscal policies, the use of excessive policy measures is restricted by market discipline. Therefore, the limits for economic policy actions in EMU are dictated by internal rather than external factors.

The need for liquidity is also influenced by the choice of exchange rate regime. The more flexibility the exchange rate arrangement encompasses, the smaller the pressure on the ECB will be to act as the issuing central bank of the key currency. In such a world, international liquidity and the demand for it would be a less pressing issue than under fixed exchange rates. The more symmetric the system will be, the more evenly the costs of the lender of last resort function will be distributed among the central banks issuing the key currencies. By accepting liquid, short-term liabilities denominated in ECU from abroad, the ECB could supply less-liquid, long-term lending for foreign actors who wish to build up their reserves in the key currency. Taking such a balance-sheet approach,<sup>18</sup> the process of the creation of international liquidity can be seen as a comparative advantage in liquidity transformation of the issuing country of the key currency. It must be that the financial markets of the key currency country are relatively most efficient in liquidity transformation.

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<sup>17</sup> The role of fiscal policy is discussed in e.g. Alogoskoufis & Portes (1990) or Goodhart (1993).

<sup>18</sup> See Klump (1989) for a more detailed discussion.

#### 4.4 Loss of control over money supply

A spreading of the ECU would set the ECB in a special position. Generally taken, the extent of the importance of the international role of central banks is not necessarily determined by size and trade participation alone. The tone, reputation for stability, sophistication of financial institutions and sureness of touch in financial matters are overriding essentials of deep participation in international monetary affairs. These are all features that the ECB, being a new institution, has to develop in a convincing fashion in order to gain the status of the central bank issuing the key currency.

The task of the ECB for its part to promote the credibility of the economic policies and the stability of the currency could be rendered more difficult by the lack of accounting accuracy. Flows of ECU abroad could make assessment of the money growth more difficult, as such flows can only be measured imprecisely (point 5 in table 3). In order to illustrate this, let us assume that there is an offshore disequilibrium. For some reason or another, there is excess supply of ECU offshore. As a result, the exchange rate of the ECU depreciates. This will improve the current account, and offshore ECU become onshore ECU. As the rest of the world spends in EMU their initial excess of offshore ECU balances. As a result, the rate of growth of domestic ECU balances increases, and some of the offshore ECU inflation will have been swept onshore, making the anti-inflationary policy of the ECB more difficult.

#### 4.5 Exchange rate management

The ECU foreign exchange market could be expected to be thick enough to be less volatile, but it could also be harder to control by official intervention (point 6 in table 3). Although EMU would most probably not be more vulnerable to exchange rate fluctuations than is the USA, exchange rate management could be put in focus, independent of the formal exchange rate regime between the USD and the ECU.

If a large-scale substitution of the ECU for the USD emerges, the ECU can appreciate strongly vis-à-vis the USD. Therefore, it should be considered whether transitional arrangements are necessary to prevent the shift from USD to ECU having disruptive exchange rate and trade consequences. On the other hand, such an outcome is not very likely to appear during a short period of time. If the USD is used in over 80 % of world foreign exchange transactions, and if it makes up over 60 % of world foreign exchange reserves, it is quite improbable that public and private sector economic agents would suddenly sell a large part of their holdings in such a way that they would suffer capital losses. In the same fashion, Kenen (1993) forecasts that the ECU holdings will grow gradually via accumulation rather than rapidly via asset switching.

The popularity of the single currency ECU will also depend on the stability of exchange rates between it and the other internationally used currencies. The inflation record of the ECU as relative to the USD and the JPY will, in the long term, affect the exchange rate development between these currencies. If inflation in EMU is assumed to be slower than in the USA and Japan, we should see a strong single currency ECU. If EMU inherits the added current

account surplus of the Member States, such an outcome would keep the ECU as a scarce international currency (point 1 in table 3). Consequently, there would have to be a continuous capital outflow from EMU. This would promote the international use of the ECU in the sense that the attractiveness of the ECU as a stable low-inflation currency would be pronounced. At the same time, however, the accompanying current account surplus would diminish the supply of ECU-denominated assets. Instead, the markets should supply a larger part of the demand by themselves. This would also diminish the cost accruing to the ECB in form of interest payments on interest-bearing assets held abroad.

It might also happen that the ECU would be strong in relative terms even if EMU would run a current account deficit. If the deficit were a sound one, i.e. the result of excess investment over saving, it might be difficult for EMU to reduce the deficit through a depreciation of the currency. Market agents might still be willing to hold ECU-denominated assets. In such a case, the exchange rate would not reflect the balance-of-payments situation of EMU, i.e. a depreciation would not occur.

If fixed exchange rates are going to be applied between major currencies again, and if the ECU is by then the main intervention currency, that could be a constraint for EMU. The key currency country may lose the power to manipulate its exchange rate completely, if the countries pegging their currencies to the key currency always undertake the opposite exchange rate change (point 7 in table 3).

#### 4.6 More symmetry: stability or instability

There are opposite views on how the introduction of the ECU as the single currency in EMU is going to affect the symmetry of the international monetary system. On the one hand, it has been argued that the international monetary system would become more stable if the ECU would become a major international currency because that would create more symmetry in the current working of the system. The main argument in this respect is that EMU would be an economic power equal to the USA, so that the bargaining power of the EU would be as large as that of the USA<sup>19</sup> (point 8a in table 3). Also, in a world with highly mobile capital, currency diversification and direct investment are strong factors in driving the system towards more symmetry, even if trade between the currency blocs would not expand remarkably.<sup>20</sup> A multicurrency reserve system could have certain advantages over one based on a single national currency, because competition between currencies could restrain the authorities involved from deviating from a virtuous course. In such a world, flexible exchange rates would encompass a continuous process of adjustment. It

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<sup>19</sup> There are also opposite views according to which EMU will not result in a qualitative switch from an asymmetric to a symmetric international monetary system. The proponents of that view argue that the leadership of the USA has already been eroded by Germany and Japan who have also become important players.

<sup>20</sup> For a discussion on EMU's effect on the symmetry of the international monetary system, see e.g. Padoa-Schioppa (1988), Giavazzi & Giovannini (1989), Alogoskoufis & Portes (1990), Jaquet (1991), Currie (1993), Goodhart (1993) or Kenen (1993).

could be easier to let exchange rates move than to harmonize domestic policies conducted within the currency blocs. Thus, flexible exchange rates would give relatively greater room for domestic economic policy actions than would fixed exchange rates do.

On the other hand, a symmetric system can also turn out to be more instable than an asymmetric system (point 8b in table 3). The autonomy of domestic economic policy might be smaller than theoretically indicated. As stated in Garritsen de Vries (1987), the experience with the greater exchange rate flexibility after 1973 shows that the floating has been helpful to balance-of-payments adjustment insofar as exchange rate movements have prevented current account imbalances from widening owing to divergent rates of inflation. But exchange rate changes have not helped in reducing the chronic current account imbalances. In addition, even if the actual policy independence might be relatively small, the danger to misuse "imaginary" room for manoeuvre would remain. This danger becomes pronounced in a situation where the cyclical positions of the issuer countries of the major international currencies differ.

Also a situation with corresponding cyclical situations could be problematic unless there is consensus on corrective domestic economic policy measures. There could be a deflationary bias if all countries tried to reduce inflation by letting the nominal exchange rate appreciate. Of course, the exchange rate cannot appreciate for everybody, so that at least some of the countries will be frustrated. Moreover, since everybody would be conducting an over-restrictive monetary policy, unemployment would rise to an unnecessary high level. In the same fashion, if all countries would try to maintain full employment through a depreciation of the nominal exchange rate, an inflationary bias would occur unless there was cooperation. Monetary expansion all over the countries would result in higher world inflation, but no effect could be seen in the unemployment rates. Without cooperation, in other words, floating exchange rates could yield prolonged misalignments instead of smooth adjustment. The cost arising from the spillovers of economic policies directed to meet domestic targets only might be relatively small, if the proportion of trade between the currency blocs remains low.

## 5 Summary

International money is defined in terms of the functions it performs. An international currency can – like national currencies – have three different roles. It is used as a medium of exchange, as a unit of account, and as a store of value. These roles can be performed either in the private or in the public sector of the economy. In an international context, contrary to national currencies, the use of a currency in these different functions is determined prominently by demand factors. In order to be considered in the decision making of international agents, the currency must fulfil some preconditions. These are the stability property of the currency, the financial market structure in the issuing country, and the transaction domain of the currency.

Once the currency has become internationally used, some benefits and costs accrue to the issuing country. The extent of the benefits and costs depends

on the symmetry of the international monetary system, on the prevailing exchange rate regime, and on the provision of international liquidity. The more dominant the currency, the more pronounced are the consequences of being the issuer of an international currency. In a world with floating exchange rates, the most remarkable benefit stems from the ability of domestic traders to pass the exchange rate risk (alternatively, hedging costs) to foreigners. Also lower transaction costs due to larger trading volumes will benefit domestic agents. The main cost, on the other hand, stems from the difficulty to control the exchange rate. The price of a major international currency is determined by supply and demand, which do not always reflect the macroeconomic stance in the issuer country. This can become costly, if the currency gets stuck at a misaligned exchange rate. In order to avoid that, international monetary cooperation may be required. International cooperation should be expected to be the more successful, the closer the negotiating parts are integrated, because the more open an economy is, the more severe are the costs of non-cooperative outcomes.

If cooperation should lead to an arrangement of limited exchange rate movements, the issuer country of a major international currency has, being of great importance for world economy, bargaining power. On the other hand, though, the exchange rate of the key currency is always the objective of a global economic policy debate. The economic policies of the issuer country of a major international currency can also be constrained by world liquidity considerations, although the internationalization and liberalization of financial markets has remarkably diminished this cost. Traditionally, it has been necessary for the key currency country to run a cumulative balance of payments deficit in order to supply its money to world markets. This has enabled the issuer country to raise real absorption, but has, in the longer run, given rise to the problem of matching the demand for the currency and avoiding an excessive deficit. This balancing has been seen as a constraint for the conduct of domestic economic policies. In the modern world, however, it is possible to obtain liquidity from the private markets, given that the country pursues a credible, sound economic policy. Therefore, the probability that the issuer country would have to run an excessive deficit in order to promote the spreading of its currency has become negligible. Moreover, there is nowadays consensus among policy makers on what kind of goals for economic policy are desirable and how these goals could be reached.

Previous experiences with internationally used currencies have shown that several developments can be identified that together imply a growing role for an international currency. Firstly, the importance of a currency has increased as a result of a stable inflation performance and a credible monetary policy. The inflation record of the ECU starts to augment only from the day it is introduced as the single currency in EMU. Although the objective of price stability is the explicit target of the monetary policy conducted by the ECB, it will take some time for the ECB to establish the credibility in implementing policy commitments. Secondly, a wide menu of financial instruments and lifting of capital controls has increased the popularity of a currency. The financial market in EMU will evidently be thicker than the market for any of the current EU currencies. But still, further financial deregulation could be required, as well as the establishment of an efficient clearing system in order to guarantee that money can be transferred easily, cheaply and quickly within EMU. Only if the

ECU financial market can perform better than the market for any other currency can the ECU become a major currency in the international monetary system. Finally, a growing share in world trade has resulted in an increased use of a currency. The transaction domain of the single currency ECU is inherited from the current national currencies. Because of the remarkable size of EMU in world trade, the ECU could also be expected to rapidly become an important invoicing currency, which also strengthens the efficient working of the financial market. But even if the potential of the ECU to become a major international currency would be beneficial for such an evolution, the position of the USD in the international monetary system will be determining. As long as international investors see no reason to give up using the USD, it will be extremely hard for the ECU to challenge the role of the USD as the key currency.

In the discussion on the potential benefits and costs for EMU of the ECU becoming a major international currency it has been assumed that at the time of the introduction of the ECU as the single currency, floating exchange rates are applied. It is further assumed that economic integration and liberalization is going to proceed, and as a result of that, the currency blocs could be willing to move over to an arrangement of limited exchange rate movements. Within such a scenario, the major benefit for EMU from a major international role of the ECU would be the ability to pass the exchange rate risk for foreigners. On the other hand, if a wide-spread usage of the ECU induces large capital flows, the ECB could lose full control over the money supply, which could make the conduct of the monetary policy and the control of inflation more difficult. Large capital flows also make it more difficult to control the exchange rate. It could require heavy intervention to produce even a small exchange rate change. Over the longer term, if there are continuous capital inflows to EMU, for example as a result of a current account surplus inherited from the current Member States, the ECU would show a trend of appreciation. Such a phenomenon could lead to currency competition and misalignments. Since competition between currencies is likely to lead to big portfolio shifts, which can be very destabilizing, there might be an urgent need for global monetary cooperation.

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