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Euro and the financial relations between Latin America and Europe: medium-and long-term implications

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Abstract

The internationalisation of the euro is in its initial stages and it is still difficult to draw any definitive conclusions regarding its scope and its implications for Latin America. Indeed, the emergence of an internationally used currency is slow and subject to inertial forces. Nonetheless, several fairly robust conclusions can be inferred from the results of the document.

The most plausible medium- to long-term international scenario seems to be development of an asymmetrical duopoly between the euro and the dollar. In a context of scant international monetary cooperation, this scenario could lead to high volatility between the two main international currencies, which will be a powerful destabilising factor for third countries. In terms of official international reserves, the growing financial use of the single European currency and the development of Euroland capital markets should lead to greater diversification in favour of the euro in the medium and long term.

Together with other factors, the growth of the euro bond market will tend to increase the pressure to widen and deepen the euro financial market and make it more liquid. This should favour the development of better conditions for both European and third-country participants. The geographic diversification strategy implemented by the European banks, and the boom in European foreign direct investment could also favour greater international use of the euro.

For Latin America, the sustained increase in the share of euro-denominated international bond issues, chiefly by the public sector, makes it necessary to consider policies for managing the currency composition of the external debt. On the other hand, the medium- to long-term consequences of an increasingly bipolar but asymmetrical international monetary system will have to be included in the Latin America national exchange rate policies, enhancing the possibility of adopting anchor baskets.

Introduction

The creation and introduction of the euro on 1 January 1999, is one of the most important economic events of the end of the twentieth century. The materialization of the European Monetary Union, the decisive stage in a protracted process of economic integration, introduces major transformations in international monetary and financial relations. The economic weight of the zone of issue—that is to say, the twelve countries that currently comprise "Euroland"—and the determination of the European authorities not to obstruct the internationalization of the new currency raise the likelihood that the advent of the euro may lead to substantial changes in the international monetary system (IMS).

Latin America is not noted for its strong links with the euro zone. Latin America's indisputable reference currency is the U.S. dollar. Nonetheless, the considerable weight of the economic ties between many of the countries of Latin America and Europe, and the interest that the process of creating the European Monetary Union has stimulated, suggest two lines of analysis.

On the one hand, Europe's movement toward monetary union has been a source of experience for Latin America for a number of years. Even though it is not possible to simply transplant an experience that is essentially unique, an analysis of the logical sequence and the convergence criteria adopted by the European Union can be very useful to the different Latin America regional groups (Chapters from SELA, 1998; Giambiagi, 1999; Heyman, 1999; Irela,

1999; Levy Yeyati and Sturzenegger, 1999a; Zalher, 1999). Interest in the process followed in Europe is further reinforced because it has taken place in a context where the dominant principle of "one country, one currency" is increasingly called into question (Alesina and Barro, 2000). On this basis, and looking beyond the diversity of exchange relationships already existing in the region, the medium and long-term options for Latin American countries seem to be polarising between the prospect of total dollarisation and participation in a regional monetary union. All this tends to strengthen interest in the European experience (see, for example, Dornbusch, 1999, and García Herrero and Glöckler, 2000).

On the other hand, the probable direct and indirect effects of the euro on economic relations between Europe and Latin America are also provoking increasing interest. To analyse the impact of the new European currency on other regions of the world in prospective terms is a complex task. First of all, the euro will have effects on the member countries of the European monetary union that are not easy to foresee and that will strongly influence the progress the new currency can achieve in international transactions. (One example concerns the effects of the euro on the development of the financial markets within the euro zone.) In addition, the effects of the euro in third countries will depend on the scope of the internationalization of the new currency. It is this dimension that we have chosen as the main thrust of this paper, although of course we do not propose to cover all aspects of this vast issue. The study will focus on the characteristics of the internationalization process of the euro and on identifying the transmission channels through which the new eurocurrency can exert influence in Latin America, with special emphasis on the analysis of European-Latin American financial relations.

This choice seems to be justified. As has already been mentioned, the impact of the euro on European-Latin American relations will mainly be felt through financial rather than commercial channels (Levy Yeyati and Sturzenegger, 1999c)[1]. Indeed, most Latin American countries are noted for a high degree of financial openness that increases their vulnerability vis-à-vis changes in the direction of international capital flows. In addition, the development of the financial functions of the euro will very probably represent a decisive factor in the internationalization of the single European currency.

Monetary history shows that the emergence of key currencies—i.e. internationally used currencies—is a slow process because it is subject to inertia of various sorts. The inertia is particularly strong with regard to the unit of account and medium-of-payment functions of the currency. Conversely, the internationalization of a reference currency can progress more rapidly when it is used in financial functions. In the case of the euro, this was observed in some analyses made before the eurocurrency actually emerged. Several papers have highlighted the possibility of a greater use of the euro in financial operations as well as the impact this can have on the development of the IMS (Bergstein, 1997; Mc Cauley, 1997; Portes and Rey, 1998; Artus 2000a). A greater use of the euro by private agents in financing operations (investment and borrowing) could be the channel through which to progress toward an increasingly bipolar IMS.

The first two years of existence of the euro appear to confirm these analyses. The initial stage of the new currency has been characterized by a significant expansion of euro-denominated international bond issues and the emergence of the eurocurrency as a borrowing currency (Detken and Hartmann, 2000; BCE, 2000; BIS, 2000; BIS 2001b; Galati and Tsatsaronis, 2001).

Latin America has played an important role in the expansion of the euro-denominated bond market. This has been one facet of the intensification of financial relations between Europe and Latin America. These relations have also been characterized by a boom in direct foreign investment

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[1]   Other studies that consider the implications of the creation of the euro for the group of developing countries also stress the preeminence of financial channels over commercial ones (for example Cohen, 2000).

(FDI) of European origin, the growing presence of euro-zone banks in Latin America and a sustained increase in European bank loans toward the region, all of which was clearly perceptible during the nineteen nineties.

The intensification of financial relations has many implications in the medium and long term. This study will deal mainly with one of the aspects that have not been examined very closely up to now: the repercussion on Latin American exchange regimes. This involves considering the perspectives of the eurocurrency in terms of its unit-of-account function. This function is not limited to the "price-setting" of international trade; it also has to do with the use of the international currencies as anchors for monetary and exchange policies (Bénassy-Quéré and Coeuré, 2000). In this context, we will examine the perspectives of the Latin American countries on the basis of an analysis of the conditions for generalizing the use of the euro as a single anchor currency or as part of a basket of currencies.

The study is organized in four sections. The first evaluates the initial steps of the euro and its internationalization in general terms, which enables us to formulate hypotheses about likely scenarios for the development of the IMS. The second analyses in greater depth the factors that will have a bearing on the internationalization of the European currency. The third section examines the channels through which the euro will exert an influence in Latin America on the basis of the recent development of relations between the two regions, looking at trade flows and, most importantly, financial flows. The final section applies an econometric analysis to 93 economies, on the basis of which we study the real and financial determinants of the options selected by developing countries in terms of de facto anchoring, and make a prospective analysis of the ways the euro can come to be used as an anchor currency in Latin America. The conclusion summarizes the main findings.

I.   The euro and the IMS

The appearance of the euro on the international scene marks the beginning of a new era in international monetary and financial relations. The deepening process of integration that began in the 1950s and the creation of the euro represent decisive steps in the long road toward a truly common European market. At the same time, given the economic weight of "Euroland" and the will demonstrated by the European authorities, the advent of the euro opens up the possibility of instituting a new international currency capable of competing with the dollar. The scenario that seems most plausible, i.e., an increasing but gradual bipolarisation of the IMS, is very likely to give rise to greater exchange-rate volatility unless the U.S. and European authorities implement a strengthened monetary cooperation, which does not for the moment seem to be on the horizon.

1.   The euro, an international currency: overview

If we compare the relative weights of the United States and the euro zone in the world economy, we can see that the euro zone has a greater weight in terms of population. At the same time, the weights of the euro zone and the United States are similar in terms of international trade, as shown in **table 1**.

Table 1
WEIGHT OF THE UNITED STATES AND THE EURO ZONE
IN THE WORLD ECONOMY

	Population	GDP	Stock-market capitalisation		External openness
	(1)	(2)	(2)	% GDP	(3)
Euro Zone	302.80	5875.60	3709.80	56.80	19.00
United States	273.70	8590.10	11596.50	121.50	14.80
Japan	126.80	4223.20	2263.40	48.20	9.90

(1) Millions of inhabitants (2000) (2) Billions of dollars (2001)
(3) Exports/GDP in % (2000)

Source: World Bank, Eurostat, OECD

On the other hand, if we adopt GDP and stock exchange capitalization as criteria, the weight of the U.S. is greater. These basic statistical data can lead us to consider that the euro has a strong potential to increase its share as an internationally used currency in the world economy.

Another relevant factor to be considered is the position of the European authorities with regard to the internationalization of the euro. Knowing that history and economic theory show that progress in the international use of a currency has to be gradual, the European officials are not actively seeking to promote the internationalization of the euro. Unlike Japan, however, which has also resisted internationalizing the use of the yen (because the japanese consider that it might disrupt the behavior of their monetary policy), the European authorities do not oppose a growing internationalization of the euro. Their position is that the zone's strategy in terms of monetary policy is sufficiently strong to face the implications of an increasing internationalization of the eurocurrency (Duisemberg, 2000). Their position is, therefore, "neutral", and this in fact favors an increasing international use of the euro.

2. The euro in the international scenario: a difficult beginning

Contrary to the predictions of a majority of specialists, the euro weakened substantially during its initial stages, and lost almost 30% of its value in the first few years of its existence. Three main groups of factors have been suggested to explain this:

First of all, economic factors. A gap has developed between the U.S. economy, which has been experiencing an exceptionally prosperous phase, and the euro zone, whose growth cycle began later and has been less strong. One of the consequences of this situation is an interest-rate differential that favors the dollar.

Secondly, financial factors, of a more structural nature. Although the U.S. is a major net importer of capital, the euro zone has been experiencing net outflows of long-term capital (portfolio investment and direct foreign investment) that far exceed their current-account surpluses since 1994. The U.S. has a growing current-account deficit (over 4% of GDP), with a favorable basic balance thanks to massive capital inflows. In turn, the euro zone has a current-account surplus (around 0.5% of GDP) together with an unfavorable basic balance due to this significant outflow of capital. The deepening European integration and the creation of the euro have contributed in part to this situation. European companies have been pressed to increase their critical size, which has led to mergers and acquisitions in the U.S. market (which is also the epicenter of the new economy). Moreover, European companies have begun to participate increasingly in the movement to achieve

geographic diversification of their security portfolios: between 1998 and 2000 the volume of net purchases of foreign stock doubled.

Thirdly, institutional factors. The implementation of the EMU has not clarified the situation in terms of economic governance of the euro zone. Uncertainty still reigns on many levels, and from the viewpoint of foreign investors, the European Central Bank's policy is far from clear. This latter factor will probably be long-lasting; the strengthening of the European monetary authority entails a slow learning process.

Nevertheless, the recent nominal depreciation of the euro arose from the fact that the dollar was undervalued at the time the eurocurrency was created. In effect, most of the studies conducted on the basis of a fundamental equilibrium exchange rate (developed by Williamson, 1983), indicate that on the date the euro was introduced, it was overvalued vis-à-vis the dollar by an estimated 7% to 10% (Borowski and Couharde, 1999; Teïletche, 2001).

The definition of an equilibrium exchange rate is, however, complex: the short term is dominated by the cycle, the medium term by the savings behavior of the issuing zones, and the long term reflects the external positions of the two currency zones (Artus, 1999), as well as the difference in their potential growth rates.

This last point is crucial: a medium- and long-term source of uncertainty has to do with the ability of the European economy to draw nearer to the potential growth rate of the U.S. economy. A major portion of the studies on this subject show that the long-term trend in the growth rate of the euro zone is between 2.5% and 3%, while that of the United States is close to 4%. Even though the higher internal savings rate and the usually positive current-account balance of the euro zone tend to weaken the dollar, a persistent differential in terms of potential growth works against the strengthening of the euro in the long term.

Another factor of uncertainty in the medium term arises from the behavior of savings and investment in Europe. As we have seen, the euro zone is characterized by a current-account surplus, which is a reflection of surplus savings. This surplus is a result of the existence of substantial private savings, which are higher than the public deficits. This European configuration is just the opposite to that of the United States, which is characterized by a shortfall in savings in spite of its fiscal surplus.

One can foresee that the overall saving rate in the euro zone will continue to be high for two main reasons. First, the reduction of fiscal deficits is an objective of the countries of the zone. Second, it is expected that households will increase their savings efforts for demographic reasons (ageing population and pension funding). From this point of view, the development of financial markets linked to the creation of the euro should stimulate the accumulation of these financial savings.

In principle, the abundance of savings in the euro zone should favor the appreciation of the eurocurrency. European savings, however, may be insufficient if the companies of the zone increase their investment in Europe in order to reduce their relative lag vis-à-vis the U.S. (in particular in the new economy). If this takes place, the euro zone might even experience a major current-account deficit (Artus, 2001), which could contribute to weakening the eurocurrency.

3.   The international role of the euro and the IMS

Although they are different issues, the movement of the euro exchange rate and the perspectives for the euro's role in the international sphere are not unconnected. If the euro

depreciates permanently and there is skepticism concerning its parity, this could discourage its use and might affect its acceptance among the key IMS currencies.

In any event, many authors expect a rise of the euro as an international currency. A majority of these studies emphasize that the financial role of the euro (that is to say, as a borrowing and lending currency) will develop much more rapidly than its international trade function (i.e. as an invoicing currency). This is confirmed by the two first years of the euro's life, in particular with regard to its role as a borrowing currency, which has developed significantly. This is a distinctive characteristic of the present internationalization of the euro that will be analyzed later on.

On the other hand, some authors indicate that the progress of the "trade" euro might occur in "steps", with qualitative leaps, that should quicken the internationalization of the eurocurrency (de Boissieu, 2000) (**figure 1**). The same authors, however, also argue that an excessive delay in the development of the trade function of the euro could work against the establishment of its financial role: a "complete" international currency should not be subject to excessive or too protracted a divergence between its financial and trade roles.

Figure 1

THEORETICAL PATH OF THE INTERNATIONALIZATION OF THE EURO

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Source: de Boissieu (2000)

With regard to the evolution of the IMS in the medium to long term, it is possible to distinguish at least three scenarios. The first is an IMS that will long continue to be dominated by the dollar, which implies that the initial progress observed in terms of the financial function of the euro will be followed by back sliding and that the eurocurrency will fail to win definitive acceptance on that role. Second is the exact opposite scenario: the financial function of the euro becomes firmer and its trade role develops at a faster than expected rate. This would lead to an increasingly symmetrical dollar-euro duopoly. The last and seemingly most plausible scenario, taking into account the first steps of the euro in the international arena and the teachings of economic theory, is a duopoly that gradually decreases in asymmetry. A slow but growing bipolarization of the IMS, however, also entails the development of the euro's role as an anchor currency in the exchange systems of other countries.

Within the framework of this most likely scenario, it seems clear that the volatility of the dollar-euro exchange rate is unlikely to decrease. On the contrary, as suggested by theoreticians on the role of leadership (such as Kindleberger), asymmetry and the existence of a clearly hegemonic currency are conditions that favor stability. Historic experience shows that the co-existence of two dominant currencies (as occurred with the pound and the dollar in the 1930s) can be a destabilizing element and lead to unfavorable effects in third countries.

Let us analyze the hypothetical reaction of the euro-dollar exchange rate to a trade shock that affects the Euroland/dollar bilateral current account under three possible scenarios for anchoring the currencies of third countries to the key currencies of the system: (1) general flotation where no currency is anchored to the dollar or the euro; (2) a hegemonic system in which all currencies except the euro are anchored to the dollar; and (3) a bipolar system in which both the U.S. and the euro zone conduct half their trade with the countries of their respective monetary blocs. We see that the hegemonic system, although less stable than the general flotation system, is in turn much less volatile than a bipolar IMS (Benassy-Quéré and Coeuré, 2000).

Thus the current situation, set between the hegemonic and bipolar systems (i.e. an IMS in harmony with the increasingly bipolar but asymmetrical medium- to long-term scenario we see as most likely) entails high volatility between the two main international currencies.

Prior to examining the first steps of the internationalization of the euro in greater depth, it is useful to indicate that, within the framework of a growing bipolarization of the IMS, we can foresee two possible configurations regarding the volatility of the euro-dollar parity. On one hand, a "pessimistic" configuration of "competition" between the dollar and the euro, in which the U.S. and European monetary authorities continue to give priority to their domestic objectives and are uncooperative toward each other, which would accentuate the instability of the bilateral parity. On the other, an "optimistic" configuration of strengthened monetary "co-operation": the U.S. and European authorities consider that international monetary stability is a public commodity and agree to intervene and monitor the evolution of their exchange rates, and to progress toward coordinating their macroeconomic policies. In this configuration, the volatility of the euro-dollar exchange rate would decline.

The former configuration appears to be most likely. While the IMS is in its current intermediate situation, it is difficult to imagine the U.S. being willing to give lower priority to its domestic objectives. On the other hand, the deficiencies in the institutional architecture of the EMU, including the absence of a unified political authority, makes it difficult to think that Europe could defend a coherent macroeconomic policy on an international scale. In any event, it is clear that the European monetary authorities do not have an explicit objective on the subject of the exchange rate and seem to be increasingly inclined to practice a policy of "benign neglect" as long as the degree of external openness of the euro zone is less than that of their member countries considered individually.

Empirical analysis (**see box 1**) confirms these hypotheses. As shown in **table 2** and **figure 2**, the euro/dollar exchange rate has become more volatile since the introduction of the eurocurrency.

Table 2

VOLATILITY OF THE EURO/DOLLAR PARITY

(annual and quarterly averages based on daily data)

	Volatility	Five-month moving average	Trend (Hodrick-Prescott Filter)
1998	**5.20**	**5.23**	**5.84**
1999	**6.47**	**6.61**	**7.04**
2000	**9.99**	**9.50**	**8.78**
Q1 2001	10.89	10.43	9.90

Source: Authors' calculations

Figure 2
ANNUALIZED VOLATILITY OF EURO/DOLLAR PARITY
(On the basis of daily data)
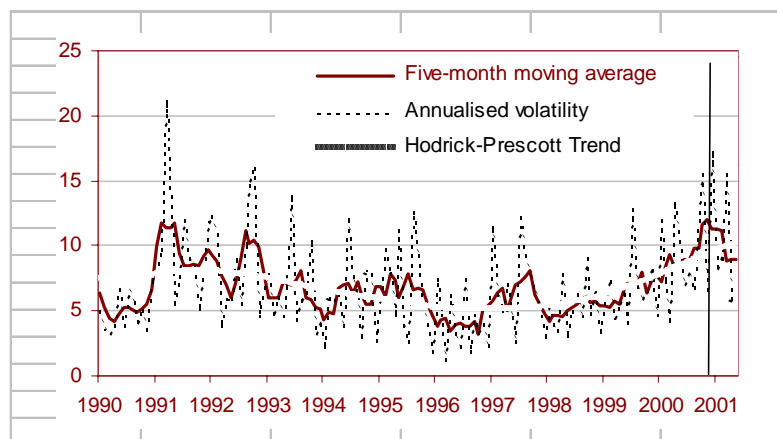
Source: Authors' calculations

BOX 1
METHOD FOR CALCULATING THE ANNUALISED VOLATILITY

The data used are taken from the spot quotations in the New York market at their closing price. We have used the exchange rate of the German mark between 01/01/1971 and 31/12/1998 and the exchange rate of the euro between 01/01/1999 and 11/05/2001.

As of the introduction of the euro on 1/01/1999, this currency was converted to German marks using the conversion rate established for the member countries of the monetary union.

Annualised volatility was calculated using the following formula:

$$\sigma = \sqrt{\frac{n\sum_{i=1}^{n} x_i^2 - \left(\sum_{i=1}^{n} x_i\right)^2}{n(n-1)}}$$

Where:

x_i = daily quotation

i = day

n = number of monthly quotations

σ is multiplied by 100 in accordance with financial standards

On the basis of the volatility data calculated as shown above, a five-month moving average was calculated using the Hodrick-Prescott method[2] in order to eliminate the strong fluctuations in the volatility and its trend.

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[2] This is a smoothing method that is widely used among macro-economists to obtain a smooth estimate of the long-term trend component of a series. The method was first used in a working paper (circulated in the early 1980s and published in 1997) by Hodrick and Prescott to analyse post-war U.S. business cycles.

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II. Internationalization of the euro: importance of the financial dimension

The impact of the creation of the euro on international monetary relations will depend largely on the degree of internationalization of the European monetary unit. It is useful, therefore, to begin by distinguishing between the different private and public uses of currencies at an international level, and then present the conditions required to achieve the internationalization of a currency as they are formulated and analyzed in the economic literature. This will make it possible to use these analytical tools to evaluate the extent to which the euro is likely to become an internationally used currency.

1. Theoretical framework

1.1. A typology of the international use of currencies

On the basis of the typology proposed by Krugman (1991) and following the presentation made by Bénassy-Quéré, Mojon and Schor (1998), we can distinguish six types of international uses of a currency as a function of a twofold criterion: (1), the three traditional functions of currencies, and (2) the private and public use of currencies on an international scale (**table 3**).

Table 3

INTERNATIONAL USES OF A CURRENCY

Function	Private use	Public use
Medium of exchange	Means of payment / vehicle currency	Intervention currency
Unit of account	Price-setting / invoicing currency	Reference currency (anchor)
Store of value	Investment and financing currency	Reserve currency

Source: Krugman (1991)

An international currency is used by non-residents as a medium of exchange in trade transactions and capital movements. Private agents use an international currency as a vehicle, i.e. as an intermediary between two second-ranking currencies. Thus, transactions between Brazil and Thailand are broken up into two separate moments: *real*/dollar and dollar/baht. In turn, monetary authorities also use international currencies as a medium of payment in their interventions in foreign-exchange markets.

Secondly, an international currency is used as a unit of account by private agents to invoice their trade or financial international transactions. This function is different from that of a medium of payment in the sense that one transaction can be denominated in one currency and then paid in another (distinction between invoicing currency and medium of payment). Monetary authorities also make use of the unit-of-account function in implementing their exchange policies when they decide to anchor their currencies to an international reference currency. This has to do with exchange system issues.

As a store of value, an international currency is used by private agents with the aim of preserving the value of their assets. They place their assets in different international currency denominations as part of their strategies to optimize their risk/yield ratio. In turn, monetary authorities manage the composition of their international reserves as a function both of their objective of optimizing their risk/yield ratio and of the nature of their interventions in the foreign-exchange market.

These different international uses of currencies are separable but interdependent. Schematically, the interaction between these different uses can move along various channels (see **figure 3**). For example, the decision adopted by the monetary authorities to give priority to certain currencies in the composition of international reserves (store-of-value function) can be conditioned in part by the choice of an anchoring mechanism with regard to these currencies (unit-of-account function).

MAIN SYNERGIES BETWEEN INTERNATIONAL MONETARY FUNCTIONS
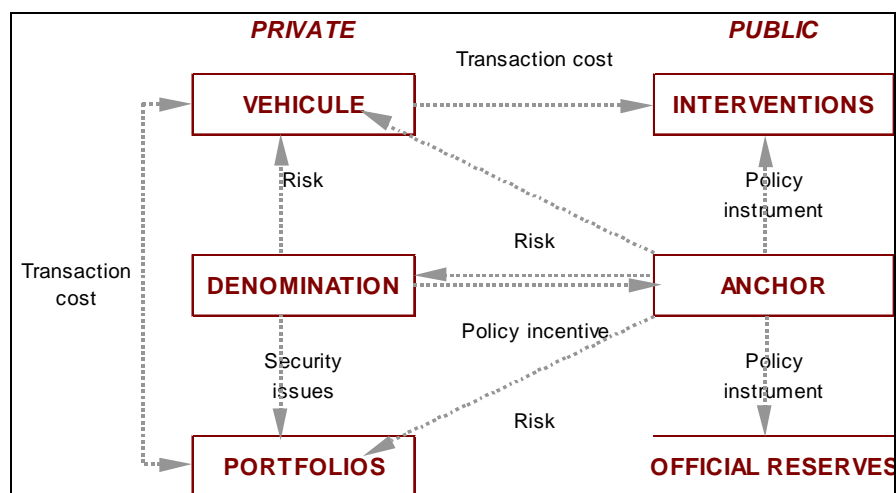
Source: Bénassy-Quéré, Mojon and Schor (1998)

Another channel has to do with transaction costs. If a currency is used as a vehicle currency, transaction costs are low and the monetary authorities will tend to use it in their interventions, while private investors will try to procure assets denominated in that currency.

The degree of use of an international currency by a country can be very different depending on the above-mentioned functions: thus, the dollar may be chosen as the anchor currency by monetary authorities due to the overwhelming weight of the U.S. financial markets, even though the trade transactions of that same country may be denominated in other currencies. Likewise, it is possible to consider these functions hierarchically, i.e., the international medium of payment function is frequently considered to be the most important (Bourguinat, 1985).

1.2. Conditions for the internationalization of a currency

According to Bourguinat (1987), two criteria should be taken into account:

- Stability—predictability of the currency;

- Acceptability—liquidity: In order to be international, a currency must be universally accepted; it should be a "vehicle" currency, in the sense that it is used by other countries in transactions that do not involve a direct relationship with the issuing country.

Tavlas (1991) proposes two complementary criteria:

- The country issuing the international currency should have a major weight in international trade, thus reinforcing the use of this currency by the other countries.

- The country issuing the international currency should have free, broad and deep financial markets, thus guaranteeing the liquidity of the currency and making it possible for the currency to play a store-of-value role for private and public participants.

These conditions are necessary but not sufficient to explain the reasons why international operators tend to favor one currency as a key currency. Some authors emphasize the role of transaction costs, economy of scale phenomena, positive externalities (Kenen, 1992) and network effects (Aglietta & Deusy-Fournier, 1994). These approaches make it possible to demonstrate the existence of self-reinforcing and inertial processes in the international use of currencies. From this

point of view, the progress of the euro as an international currency should be gradual. In other words, the dollar should maintain its supremacy for a long while yet.

2. The internationalization process: different perspectives for different functions of the euro

When the euro officially appeared on the scene, the dollar was by far the dominant international currency. The dollar is still, in fact, the most widely used medium of payment, and represents a decisive proportion (around 50%) of all transactions in the foreign-exchange markets. In 1999 the dollar represented over 60% of the international reserves of central banks, against slightly over 12% in the case of the euro (the yen was a distant third, with only 5% of the total)[3]. The hegemony of the U.S. currency has become even stronger in the last few years, representing almost 70% of international reserves in 2000, against the euro's slightly over 11% (**table 4**).

Table 4

CURRENCY COMPOSITION OF FOREIGN-EXCHANGE RESERVES, ALL COUNTRIES

(In %)

	Dollar	Euro	Yen	Sterling	Swiss franc	Others
1999 Q1	63.80	12.64	5.03	3.73	0.64	14.15
1999 Q2	64.44	11.97	4.74	3.74	0.63	14.47
1999 Q3	63.92	12.14	5.09	3.76	0.62	14.48
1999 Q4	63.91	11.78	5.13	3.71	0.60	14.87
2000 Q1	64.13	11.93	5.21	3.73	0.64	14.36
2000 Q2	64.11	11.76	4.98	3.62	0.64	14.89
2000 Q3	69.04	11.43	5.01	3.60	0.63	10.29

Source: Authors' calculations on IMF data

With regard to invoicing of trade transactions, the dollar also plays a decisive role, representing around 45% of the total. Although the differences are less relevant if we consider the financial roles of the currencies, the dollar was also dominant on this level at the time the euro was introduced. Prior to the creation of the euro, 56% of all international bonds issues were denominated in dollars, while the eurocurrency share (i.e., the total of all its component currencies) was 36%, taking an average for the 1996-1998 period.

As will be seen, the international role of the euro is expected to develop more rapidly in the sphere of financial transactions than in other types of transactions.

2.1. Private use of the euro as a medium of payment and vehicle currency

As previously mentioned, although the euro zone has a greater share than the U.S. in world exports of goods and services, the adoption of the euro as a medium of payment/vehicle currency will be a slow process. In fact, changes in exchange denomination practices generally take a long

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[3] It should be noted that the total international reserves in euros in the central banks of the Economic and Monetary Union are not comparable to the sum of the currencies that made up the single European currency. This is due to the fact that a portion of the reserves of the European central banks (for example, the francs held by the German central bank) was converted into domestic assets as a result of their transformation into euros.

time. In this sense, according to a study conducted by the European Central Bank (ECB, 1999), four factors could lead the euro to challenging—although certainly in the long term—the dollar's predominance a medium of payment/vehicle currency:

(1) All the markets in which the euro is used as a medium of payment/vehicle currency should tend to experience a reduction in transaction costs, which would increase the likelihood of using the euro for this purpose. In particular, non-residents who seek to protect themselves against exchange-rate risks should find new instruments denominated in euros in the euro zone's single foreign-exchange market.

(2) Euro-zone agents are in a better position than in the past to require that the eurocurrency be used in their international transactions in order to limit exchange-rate risks. European exporters who up to now have used foreign currencies may progressively adopt the euro, their local currency, as a payment and invoicing currency vis-à-vis third countries.

(3) Emerging and transition countries could be persuaded to use the euro to denominate and pay for their imports in order to balance their overall exchange-rate risk vis-à-vis the euro zone. Moreover, once they become familiar with the eurocurrency, economic agents in those countries could turn to the euro as a vehicle currency in their local transactions.

(4) Transactions denominated in euros will, at a certain point, reach a threshold that will lead economic agents to feel increasingly inclined to use the euro as a medium of payment and vehicle currency. This trend should be accompanied by a reduction in transaction costs, thus favoring the continuation of the euro's internationalization process.

2.2. Private use of the euro as a price-setting and invoicing currency

Progress in this field is also expected to be slow, because it is subject to the same factors that determine the use of the euro as a medium of payment/vehicle currency. The international role of the euro here depends greatly on practices in the commodity and energy market, which are noted for their extensive use of the dollar. These practices evolve slowly due to the high degree of standardization and centralization of the markets.

As mentioned previously, we cannot dismiss the possibility that the "trade" euro may progress in "steps", i.e. with qualitative leaps. Neither can we rule out the possibility that, in the not too distant future, European companies may begin to invoice their sales of industrial products to the rest of the world in euros (de Boissieu, 2000).

2.3. Official use of the euro as a reserve, intervention and reference currency

According to the ECB (1999), central banks tend to adopt a conservative position when managing the level and composition of their international reserves. Any change on this level, therefore, will be gradual. It is, however, likely that the central banks may be driven to more forward in this area for three main reasons:

(1) The central banks may want to change the composition of their assets to take advantage of the diversification options offered by the euro. These policies may be stimulated by an increase in the liquidity and depth of the capital markets in euros, as discussed below. (2) Greater use of the euro by private agents should lead the central banks to use the euro as an intervention currency. (3) The euro will be used by the central banks of countries that wish to anchor their own currencies to the euro.

With regard to the use of the euro as a reference currency, it is likely that a certain number of countries may, in future, decide to link their currencies—formally or informally—to the euro or to

a basket of currencies including the euro. This scenario involves, first of all, the countries that may wish to join the European Union over the next few years. It could also involve other emerging countries that seek to stabilize their currencies in relation to one or several reference currencies (we will return to this point in the fourth section).

A recent study by Eichengreen and Mathieson (2000), which analyses the changes in the composition of the official international reserves of emerging countries, completes and confirms the above analysis. These authors show that the composition of international reserves is highly stable over time in terms of their main determinants: trade flows, financial flows and the foreign-exchange system. The transformations observed are gradual, which suggests considerable inertia. After declining between 1970 and 1992, the dollar share of official reserves increased uninterruptedly until 1997. Symmetrically, the share of the yen and the European currencies declined during the 1990s.

Econometric tests conducted by these authors show that the importance of the key currencies (dollar, mark and yen) in international reserves prior to the creation of the euro is increasingly a function of the weight of the issuing countries in trade and the proportion of the foreign debt denominated in these currencies. In addition, the stronger the anchorage of a country to one major currency, the greater the share of this currency in the country's reserves. Moreover, the econometric studies reveal a complementary relationship between the dollar and the mark, which suggests that these two currencies are used jointly by monetary authorities as an international reserve instrument.

Another major result of this study—which concerns a period prior to the creation of the euro—is that developing countries that deregulated their capital account have been more inclined to change the composition of their international reserves in foreign currency to give more weight to the dollar and the pound sterling. The explanation suggested by the authors is that these two currencies are issued by countries that are noted for possessing the most developed international financial markets. It can therefore be inferred that, as the financial markets of the euro zone develop, the eurocurrency could occupy a more relevant position in official international reserves.

3. Financial use of the euro by private agents: a significant incentive to internationalization

The use of the euro by the private sector as a borrowing and lending currency should play a major role in the eurocurrency's internationalization, for three reasons: (1) Financial transactions have a much greater weight in international transactions than operations in goods and services. Thus, in foreign-exchange markets the essential part of transactions is the counterpart of financial transactions. (2) There is ample consensus that the creation of the eurocurrency should contribute to a rapid development of financial markets in euros. All the specialists foresee the progressive implementation of a broad, deep and liquid euro market, which is expected to result in more favorable lending and financing conditions for European and third-country operators. (3) The creation of a single European currency may favor the consolidation of the euro-zone banking system in its traditional role as an international financing intermediary, in particular with regard to emerging countries.

3.1. The international banking market

The banking systems of the main countries of the euro zone (Germany, France, Italy, Spain) have traditionally been very active in the international banking market, where they have a dominant position (**table 5**). Indeed, the presence of large banks euro-zone is particularly strong in emerging European, Asian and Latin American countries.

The recent development of the international activity of the European banks has taken place in several stages. At first the European banks extended loans and borrowed in euro-dollars, conducting maturity-transformation operations in foreign currencies to benefit non-residents. Then, as a result of the deregulation of exchange operations at the end of the 1980s, the European banks began to issue loans in their own currencies, thus increasing international liquidity in eurocurrency's (euro-marks, euro-francs…). With the creation of the single currency it possible that, by opening up a much larger market, the euro will offer European banks the opportunity to take advantage of their know-how. On this basis, the European banks could consolidate their position vis-à-vis the U.S. and Japanese markets. The international network of the euro-zone banks will be one of the vectors for the circulation and use of the single European currency on a worldwide scale.

Table 5

CONSOLIDATED INTERNATIONAL CLAIMS OF REPORTING BANKS

BY NATIONALITY OF REPORTING BANKS, END-DECEMBER 2000

(in millions of US dollars and in %)

	Total	Japan	United States	European Monetary Union (1)	Switzerland	United Kingdom	Other
All countries*	**6575.2**	**944.0**	**412.6**	**1997.8**	**432.3**	**564.9**	**2223.7**
Developed countries	4985.7	690.3	277.4	1337.2	369.8	392.2	1918.8
Developing countries	875.8	76.8	97.3	429.5	32.0	73.0	167.2
Offshore centres	634.3	176.8	37.8	204.4	30.1	76.9	108.3
Other	79.4	-	-	26.7	0.4	22.9	29.4
All countries**	**100.0**	**14.4**	**6.3**	**30.4**	**6.6**	**8.6**	**33.8**
Developed countries	100.0	13.8	5.6	26.8	7.4	7.9	38.5
Developing countries	100.0	8.8	11.1	49.0	3.7	8.3	19.1
Offshore centres	100.0	27.9	6.0	32.2	4.7	12.1	17.1
Other	100.0	0.0	0.0	33.6	0.5	28.9	37.0

(1) Intra-EMU excluded
* Billions of US dollars
** In %

Source: Authors' calculations on the basis of BIS (2001a).

3.2. The main factors in the development of the euro financial market

The creation of the euro has had two direct and immediate positive effects on the capital markets in Europe: (1) it has put an end to the fragmentation of national markets; (2) it has eliminated the exchange-rate risk between the European currencies.

By increasing the size of the markets and eliminating the obstacles to capital circulation, the single currency tends to increase the liquidity of the euro-zone markets, i.e., it increases the possibility of conducting major transactions without causing a significant change in the value of securities.

The financial weight of the euro is considerably lower than its economic weight, which can be explained by European fragmentation. The opposite occurs in the case of the dollar, whose financial weight is much higher than its economic weight. To the extent that the economic weights of the U.S. and Europe (measured by size of GDP or population) converge there may also be a convergence of financial weights, thanks to a significant expansion of the capital markets of the euro zone (although this will no doubt be slowed by inertia).

Several factors that are not directly linked to the creation of the euro, but whose effects will be magnified by its appearance, are likely to contribute to a strong development of the capital markets of the euro zone. On the capital-supply side, an increase in domestic savings in Europe (for demographic reasons) and the changes in the way families allocate their wealth (for example, the share of financial deposits in the French population's equity has tripled in the last 20 years). On the capital-demand side in increase, three factors should strongly increase the financing needs of companies in Europe: economic growth, the expected increase in investment, and corporate restructuring. From this point of view, the creation of the euro will have strategic repercussions on all sectors of the economy and should involve supplementary corporate investment that will require efficient financing.

3.3. Impact of the creation of the single currency on the different components of the euro zone's financial markets

The different components of the euro zone's financial market—the money and foreign-exchange markets, the stock market and the bond market—have been affected by the creation of the eurocurrency in 1999. Up to now, the private-sector bond market has been by far the most dynamic (ECB, 2000).

3.3.1. The money and exchange markets of the euro zone

The entry into force of the single European currency and the new monetary policy framework have given rise to greater integration and uniformity in the entire euro zone. With the introduction of the new eurocurrency, the money and inter-banking markets have begun to operate in a much more integrated manner. In the case of banks situated in the euro zone, a sharp reduction in the bid-ask spreads of short-term interest rates is observed. This is an indirect indicator of the integration process of the euro money market (**figure 4**).

Figure 4
THREE-MONTH MARKET RATE BID-ASK SPREADS
(average, in basis points of eurocurrency deposit rates, London close)
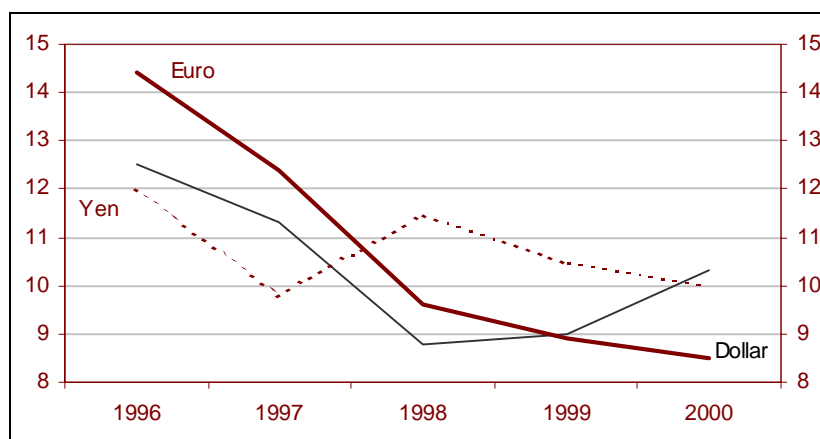
Sources: Standard & Poor's, DRI

The need to redistribute liquidity between the eleven countries of the euro-zone, including the liquidity provided by the eurosystem's refinancing transactions, favored the development of cross-border transactions in the money market. These transactions represented approximately 50% of total activities of the combined components of the money market. The system of "real time" target payments used by the central-bank system has a key role in the distribution of liquidity in the euro zone, as well as in terms of arbitrage operations that contribute to stabilizing the interest rates

of the euro zone's money markets. Nevertheless, the degree of integration of these different components is still unequal. The pension market (exchange of liquidity against securities) is less integrated because the countries of the region have not harmonized their legal and tax treatments of the management of the securities that serve as a guarantee.

On the other hand, the market for short-term derivative products market in euros has expanded rapidly. The interest-rate swap contract market in euros has become completely unified, as confirmed by the existence of a single yield curve for the entire euro zone. Moreover, liquidity and activity have increased significantly in forward contracts, and contracts in Euribor—the single reference rate—have replaced the old contracts.

The transition to monetary union has been one of the main catalysts in the rationalization of the foreign-exchange market, undertaken thanks to mergers between banks and the increasing use of electronic intermediation systems. The number of operators has declined, as has the volume of transactions, mainly owing to the mechanical effect of eliminating crossover transactions between different European currencies.

Thus, at the end of the 1990s, the foreign-exchange market underwent major transformations that, in large measure, are not simply a result of the creation of the euro (BIS, 2001b):

1. The development of electronic intermediation systems (EBS and Reuters): in 2000, 85% to 95% of inter-banking business was dealt with electronically, against 50% in 1998 and 20%-30% in 1995. By automatically providing the best conditions, electronic intermediation has resulted in a reduction in transaction volumes and a significant narrowing of the gap between purchase and sales quotations.

2. During the last few years there has been a move toward concentration in the banking sector that, as mentioned above, has contributed to reducing transaction volumes and the number of participants in the markets. Currently only about twenty banks are in a position to provide purchase and sales quotations for a wide spectrum of currencies.

3. The previously mentioned mechanical effect of the disappearance of the eleven currencies of the countries that initially made up the euro zone has had an influence on reducing transaction volume in the European markets. This has given rise to an as yet unresolved debate regarding the volume of transactions between the euro and the dollar, the yen and the pound, as compared to the volume of transactions recorded in the past between the German mark and these currencies. According to Portes (1999), who uses data provided by the Reuters screens, the volume of operations in relation to the euro appears to be higher, whereas Hau et al (2000) arrive at the opposite conclusion by analyzing the spreads between purchase and sales prices, which appear to have increased. Other estimates, arrived at on the basis of surveys of participants, suggest that, initially, the volume of the euro's exchange transactions was close to that of the mark in the previous period. Thus, it is clearly still too early to establish what impact the creation of the euro has had on transaction volume and, therefore, on transaction costs. Another reason for prudence on this subject is that electronic transactions and concentration in the banking field have significantly affected the volume and structure of the foreign-exchange markets in the past few years.

3.3.2.   The stock market

Unlike the money markets, the stock markets (and the public-sector securities markets) are not unified on a European scale (BIS, 2000). A rapid development of euro-denominated stock markets, however, can be expected over the next few years. This may be achieved as a result of several factors:

1. A "catch—up" effect with regard to competing markets: in terms of percentages of GDP, the market capitalization of the euro zone is, as we saw, much lower than that of the United States.

The proportion of listed companies, still low in the euro zone, should increase over the next few years thanks to the imminent entry into the market of numerous medium-sized companies.

2. The disappearance of the intra-European country risk in the bond segment is likely to attract risk-seeking investors to the stock markets. As in the case of the corporate bond market, the stock exchange will favor the arrival of foreign investors attracted by euro-zone products.

3. The creation of the euro has given rise to initiatives that are expected to vitalize the stock markets. Among these is the creation of Nasdaq-Europe in 2000 (a European platform for new stock issues of companies with a strong growth potential), and of Easdaq, an international stock exchange based in Brussels, whose function is to gather together the quotations for medium-size and growth companies with a European or international focus.

4. The creation of the euro should have a positive impact on cross-border and pan-European cooperation between stock markets, which will expedite the development of larger, more liquid and diversified markets. Several alliances have begun to be negotiated among the main European markets.

Nevertheless, the failure of negotiations between the London and Frankfurt markets shows that the consolidation of a pan-European stock-exchange platform is still hindered by major obstacles (Galati and Tsatsaronis, 2001), even though this consolidation is considered unavoidable by observers and analysts. In the event that excessive competition between the existing exchanges should prevail and pan-European cooperation is slowed down, it will be difficult to reduce the markets' transaction costs and increase their liquidity. It is worth mentioning that the *rapprochement* between the Paris, Amsterdam and Brussels stock exchanges, which have recently completed the implementation of Euronext, constitutes a positive cooperation experience. The success of this venture is explained by the fact that these financial markets—each one specializing in its area of strength—will operate as a network, which entails fewer obligations and restrictions than a merger.

3.3.3. The bond market

The boom in the issuance of bonds denominated in the new eurocurrency is the most important change due to the introduction of the euro. More precisely, the segment of domestic and international private bonds has expanded spectacularly (Detken and Hartmann, 2000; ECB, 2000; Santillán, Bayle and Thygesen, 2000, BIS, 2000, ECB, 2001).

Growth has been more moderate for domestic and international sovereign issues. True, the conversion into euros of the public debt denominated in the old European currencies generated a larger market than that of their Japanese counterpart (BIS, 2000). However, the rapid growth of Japanese government issues meant that the existing stock of Japanese government bonds was higher at the end of 2000 than that of the euro zone, which in turn is similar to that of the United States[4]. In any event, domestic sovereign bonds will not grow significantly in Europe in the coming years as long as the Maastricht treaty imposes limits on the fiscal deficits and debt indicators of the Monetary Union countries. With regard to emerging countries, following the financial crises that occurred after 1997, a slowdown of the rate of growth of sovereign issues is observed.

The recent evolution of the euro-zone bond market can be summarized as follows:

- The structure of the bond market in euros has changed. There was a drop in its share of sovereign-bond issue (due to a reduction in public deficits and debt-repurchasing programs); and an increase in the share of non-sovereign issues, i.e., those conducted by financial

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[4] It should be mentioned that, in terms of market value, the analysis provides a completely different view, because the Japanese government bonds reflect a persistent weakness of the Japanese economy and an increasing concern about the growing public indebtedness of that country (Galati and Tsatsaronis, 2001).

institutions and by corporations (particularly by the telecommunications sector to finance UMTS licenses)

- The market, both domestic and international, of corporate debt securities in euros is extremely dynamic. The increase in euro-denominated private-sector bond issues denominated in euros has become one of the most commented phenomena in the euro's first year of existence. Although some analysts have raised doubts regarding a further expansion following the one observed in 1999, the increase growth in the euro-denominated of the of non-sovereign bond market in euros, which was 16% during the first year of the single European currency (1999), was also significant in 2000 at 12% (ECB, 2001).

- In this context, international issues in euros have developed rapidly: in 1999, the net amounts of international debt securities in euros were practically the same as the net issues in dollars (**table 6**). In spite of its decline in the second half of 2000, the recovery observed during the first quarter of 2001 confirms the momentum of international issues in euros.

Table 6

INTERNATIONAL DEBT SECURITIES: NET AMOUNTS BY ISSUING CURRENCY

	1996	1997	1998	1999	2000	Q1 2000	Q1 2001
In billions of USD							
USD	242.7	323.7	408.9	544.6	570.0	134.0	144.0
Yen	80.7	33.4	-25.3	-8.2	31.1	-1.5	-12.2
Euro (or euro zone currencies)	*128.3*	*130.6*	*224.6*	*533.9*	*443.3*	*130.8*	*135.1*
Other currencies	36.6	59.8	66.6	93.2	103.0	21.8	17.1
TOTAL	**488.3**	**547.5**	**674.8**	**1163.50**	**1147.40**	**285.1**	**284.0**
% of the total							
USD	49.7	59.1	60.6	46.8	49.7	47.0	50.7
Yen	16.5	6.1	-3.7	-0.7	2.7	-0.5	-4.3
Euro (or euro zone currencies)	*26.3*	*23.9*	*33.3*	*45.9*	*38.6*	*45.9*	*47.6*
Other currencies	7.5	10.9	9.9	8.0	9.0	7.6	6.0
TOTAL	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: BIS (2001a).

Certainly, if we consider issues by country or issuing zone we can see that the weight of the euro in international issues has increased significantly in the euro zone but not in the rest of the world (Artus, 2000). It is, however, indisputable that the euro has gained ground as an international debt currency: in the recent period, non-resident private lenders in the euro zone have issued 21% of their international debt in the eurocurrency, whereas between January 1990 and July 1998 only 2% of their international debt was denominated in the currencies that merged into the euro (Galati and Tsatsaronis, 2001).

Four main factors explain the vitality of the bond market in euros:

1. The fall in financial intermediation (Canals, 1999): euro-zone companies are increasingly using the bonds market to get into debt, hence a reduction in financing through bank loans (disintermediation). The financial structures of the euro zone companies, increasingly reliant on direct financing, are approaching that of the Anglo-Saxon countries.

2. The scale of corporate restructuring: these operations (mergers, acquisitions, etc.) involved a strong demand for private corporate funds that was satisfied in large measure by the issuance of bonds denominated in euros, in amounts unprecedented in the history of the European financial

markets. Mergers and acquisition: involving companies with head offices or target companies located in the euro zone have risen strongly in the last two years[5].

3. The dynamic role of investors, which becomes manifest in two ways: First, foreign investors (mainly U.S. and Asian) have increased their presence in the euro zone markets to take advantage of its development. Second, the euro-zone is experiencing an increase in the combined amount of savings managed by institutional investors (mutual funds, pension funds, insurance companies). This results in a growing demand for investments in the form of securities negotiable in euros. In principle, investors want to diversify. Here, the prospects offered by the European markets are contradictory: the creation of a unified financial and monetary space eliminates the possibility of diversifying by country. However, the recent development of new segments of the euro-markets—in particular high-yield, high-risk debts—contributes to opening up an array of options for investors. Another important factor for foreign investors is the matter of the correlation of asset yields in euros and dollars. If we consider what has been suggested in numerous recent studies, this could lead to greater synchronization of the economic cycles between the U.S. and Europe.

Finally, the emergence of new instruments and segments contributes to vitalize the bond market. This is the case of the high-yield bond market (i.e., bonds issued by establishments that have low agency ratings), reinforced by an increase in merger-acquisition operations and by the demand for high-yield bonds by institutional investors. This market, which is also open to relatively modest-sized companies, has a considerable development potential (its weight is significantly lower than that of U.S. markets with similar characteristics).

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[5]   In the banking sector (up 35% in 1999), total restructuring operations exceeded that of the United States in 1999

III. Europe-Latin America economic relations and the euro

Given the importance of its relations with the European Union, Latin America will undoubtedly be affected by the emergence of the euro. Economic relations between the two regions have intensified over the past decade: In particular, during this period the flows of direct European investment toward Latin America reached levels comparable to those from the United States, and the commitment of European banks in the region increased considerably. In the case of Brazil, one of the Latin American countries that is noted for its strong trade and financial relations with Europe, some short and medium term effects (both favorable and unfavorable) related to the appearance of the euro have been observed in direct investment, trade and external financing (Baumann and Abreu, 2000). Moreover, the fact that the main Latin American economies have either concluded (Mexico) or are negotiating (Mercosur and Chile) ambitious cooperation and free-trade agreements with the European Union should - strengthen Euro-Latin American links (IRELA, 1999).

To analyze the ways in which the euro will influence on Latin America, we examine the recent pattern of relations between the two regions in trade and, chiefly, financial activities. In the financial sphere we distinguish direct foreign investment, bank loans, and funds raised through bond issues. Lastly, the growing weight of the euro in the region total debt should lead countries to pay greater attention to the management of the currency mix of their external debt.

1. European-Latin American trade relations: too sluggish

Latin America conducts around 15% of its foreign trade with the European Union. Throughout the 1990s, trade relations between the two regions developed asymmetrically: Latin American exports to Europe increased only slightly, whereas Latin American imports of European products rose by approximately 160%.

The euro's impact on trade relations between Europe and Latin America involves two aspects: (1) reduced transaction costs and increased competition within the euro zone as a result of the introduction of the single currency; (2) variations in the euro exchange.

Some authors consider that, given the low degree of commercial openness in the economies of a large portion of Latin American countries (and, in particular, in some that have closer trade relations with the euro zone), the changes induced by variations in the effective real exchange rates due to decreased transaction costs or fluctuations in the activity level of European countries do not seen to have had any significant impact on the growth of Latin American economies (Levy Yeyati and Sturzenegger, 1999c). The weakness that has characterized the euro since its birth does not favor the intensification of trade relations between the two regions. Moreover, for Latin American countries whose currencies are linked to the dollar and have major trade relations with Europe— i.e., 20% or more of exports and/or imports (**table 7**), the weakness of the euro against the dollar erodes their price-competitiveness.

Table 7a

GEOGRAPHIC STRUCTURE OF EXPORTS

(% of total exports)

	United States	Europe	Japan	Other
Argentina	7.91	14.62	2.54	74.93
Barbados	11.50	20.21	0.35	67.94
Bolivia	22.95	23.64	0.23	53.18
Brazil	19.35	24.58	4.30	51.76
Chile	16.41	24.03	14.16	45.40
Colombia	38.82	24.23	2.45	34.50
Costa Rica	48.37	21.26	1.16	29.21
Dominica	13.64	86.36	0.00	0.00
Dominican Republic	87.11	4.87	0.41	7.61
Ecuador	36.53	20.12	3.62	39.74
El Salvador	57.60	15.03	0.90	26.47
Grenada	30.00	30.00	0.00	40.00
Guatemala	52.08	11.42	1.97	34.52
Guyana	24.10	24.96	1.20	49.74
Haiti	87.07	10.54	0.34	2.04
Honduras	38.55	21.72	4.37	35.36
Jamaica	39.82	27.81	1.22	31.16
Mexico	87.92	3.33	0.73	8.02
Nicaragua	45.21	16.54	0.53	37.72
Panama	42.27	27.09	0.57	30.07
Paraguay	2.66	21.58	4.75	71.01
Peru	33.54	21.55	3.98	40.93
Trinidad and Tobago	37.81	15.57	0.16	46.47
Uruguay	5.78	16.00	0.79	77.43
Venezuela	47.28	7.63	1.25	43.84

Note: 1998 or last known year

Source: DOTS (IMF, 2000)

In any event, although the free trade agreements under negotiation may generate a new dynamic in the sphere of European-Latin American trade relations, the truth is that these relations have advanced very slowly during the past years. It is not likely, therefore, that trade will serve to increase the importance of the euro as an international currency in Latin America.

Conversely, European-Latin American financial relations have intensified notably over the last few years. For this reason, it is widely agreed that the influence of the euro in Latin America will become much more significant through financial channels.

Table 7b

GEOGRAPHIC STRUCTURE OF IMPORTS

(% of total imports)

	United States	Europe	Japan	Other
Argentina	20.41	29.46	3.27	46.86
Barbados	42.18	16.66	5.85	35.30
Bolivia	25.28	17.35	12.20	45.17
Brazil	22.98	27.05	5.11	44.86
Chile	24.92	21.11	6.19	47.79
Colombia	34.98	19.14	7.20	38.68
Costa Rica	45.88	11.08	3.97	39.08
Dominica	4.92	31.15	0.00	63.93
Dominican Republic	60.24	8.84	3.30	27.62
Ecuador	31.08	16.37	7.20	45.35
El Salvador	42.08	9.46	4.68	43.79
Grenada	28.57	4.61	4.15	62.67
Guatemala	44.85	10.58	3.42	41.15
Guyana	27.87	7.87	3.31	60.95
Haiti	59.64	10.68	4.35	25.32
Honduras	49.32	10.52	3.77	36.40
Jamaica	51.55	10.95	6.13	31.37
Mexico	75.14	8.96	4.81	11.09
Nicaragua	32.11	10.19	6.39	51.30
Panama	38.96	7.92	5.57	47.55
Paraguay	11.86	10.63	7.64	69.86
Peru	25.76	17.88	6.26	50.10
Trinidad and Tobago	43.59	18.03	3.68	34.70
Uruguay	11.14	20.07	2.35	66.43
Venezuela	43.65	17.94	3.93	34.48

Note: 1998 or last known year

Source: DOTS (IMF, 2000)

2. The boom of European FDI in Latin America

In spite of the slump recorded in 2000, when the estimated FDI flows toward Latin America declined to 74 billion dollars (versus just over 93 billion dollars in 1999), direct foreign investment increased substantially during the 1990s. Net FDI flows, which tripled between 1994 and 1999, were three times greater in 2000 than the annual average for the 1990-1994 period (ECLAC, 2001).

European investment surged in the 1990s, and by 1997 had reached a level comparable to that of direct investment of U.S. origin (SELA, 2000). Thus the increase in investment from the

European economic and monetary union, which has made a decisive contribution to increasing total FDI flows into Latin America accelerated in 1994-97 (**table 8**). Of the total from Europe, the total FDI flows of Spanish origin have been the largest. Spanish investment increased substantially in 1999, through the nearly 15 billion dollar purchase of the main Argentine oil company by the Spanish company Repsol. To this was added the completion in 2000 of an operation of unprecedented size in the Latin American financial system: the acquisition of a 33% interest in Banespa (Banco do Estado de São Paulo, Brazil) through a cash payment of over 3.5 billion dollars by the Spanish Banco de Santander Central Hispano, which consolidated its position as the main international bank in Latin America.

Table 8

DIRECT FOREIGN INVESTMENT IN LATIN AMERICA

(billions of current dollars)

	1990-1993 aggregate		1994-1997 aggregate		Variation
	Amount	%	Amount	%	%
EMU	87.56	13.72	31.66	28.24	261.60
United Kingdom	5.91	9.26	10.57	9.43	78.90
Switzerland	5.80	9.08	0.26	0.23	-95.60
Japan	1.77	2.78	3.74	3.33	110.77
United States	41.60	65.17	65.88	58.76	58.36
TOTAL	**63.84**	**100.00**	**112.10**	**100.00**	**75.61**

Source: Authors' calculations based on IDB/IRELA (1998) and SELA (2000) data

As a result of the increase in European FDI flows, seven of the ten largest transnational companies established in Latin America (based upon consolidated sales) are of European origin. Likewise, three of the five major international banks operating in the Latin America (in terms of consolidated assets) are European (ECLAC, 2001).

3. Strong expansion of European bank credit toward Latin America

3.1. Europe's banking internationalization strategy and Latin America

During the past decade, the growing presence of European banks in Latin America was accompanied by a robust increase in European bank loans. The expansion began toward the end of the 1980s—when consolidated loans by euro-zone banks exceeded those of U.S. banks—and accelerated between 1994 and 1997[6]. Thus, in March 2001, the credit balances of European banks were more than double than those of U.S. banks (**figure 5**).

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[6]   As noted by Levy Yeyati and Sturzenegger (1999c), bank credits originating from the euro zone countries rose from 34% to 46% between 1994 and 1997, while credit flows from U.S., Japanese and Canadian banks dropped from 39% to 32% of the total loans received by Latin America.

**CONSOLIDATED INTERNATIONAL CLAIMS OF REPORTING BANKS ON LATIN AMERICA /
CARIBBEAN COUNTRIES BY NATIONALITY OF REPORTING BANKS**

(millions of US dollars)
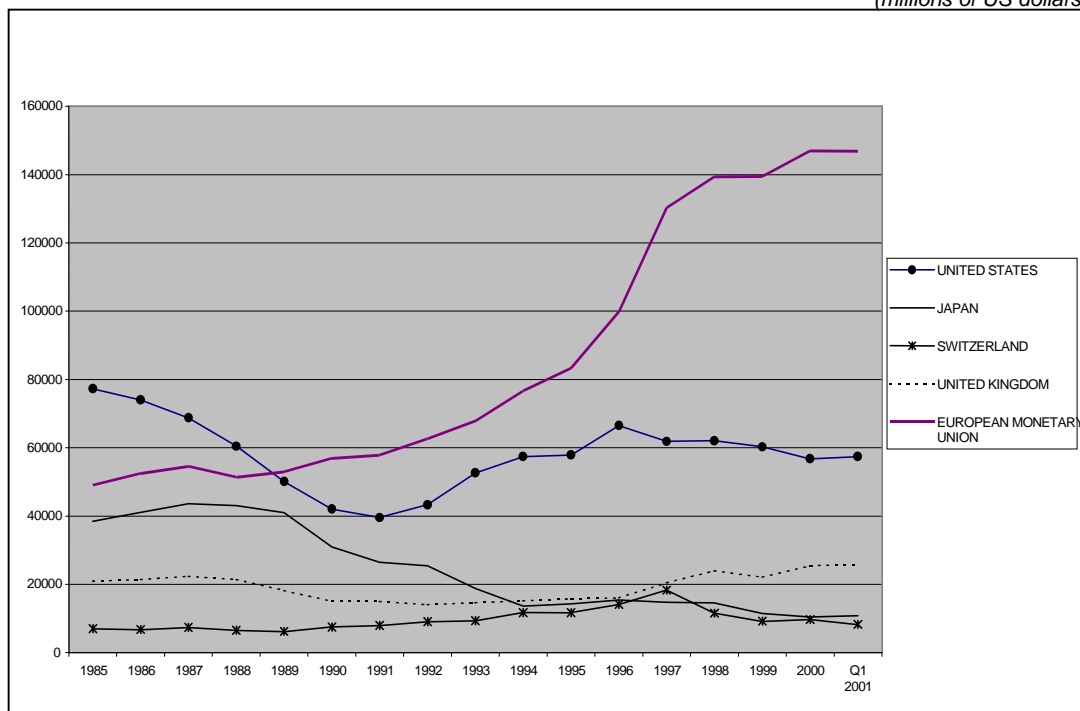
Source: BIS (2001c)

The increase of European bank loans to Latin America is part of the expansion drive by the banking systems of the main countries euro-zone; as previously mentioned, these institutions have been actively engaged in international banking operations, where they have achieved a dominant position (see **table 5**).

This global strength becomes even more visible if we analyze the weight of European banks in the supply of funds to developing countries. While U.S. and British banking business with the developing countries declined progressively in the second half of the 1980s (negative net loan flows), the financial institutions of the euro-zone powerfully expanded of their activities, with a sharp acceleration in 1994 (**figure 6**).

**CONSOLIDATED INTERNATIONAL CLAIMS OF REPORTING BANKS ON DEVELOPING
COUNTRIES BY NATIONALITY OF REPORTING BANKS**

(billions of US dollars)
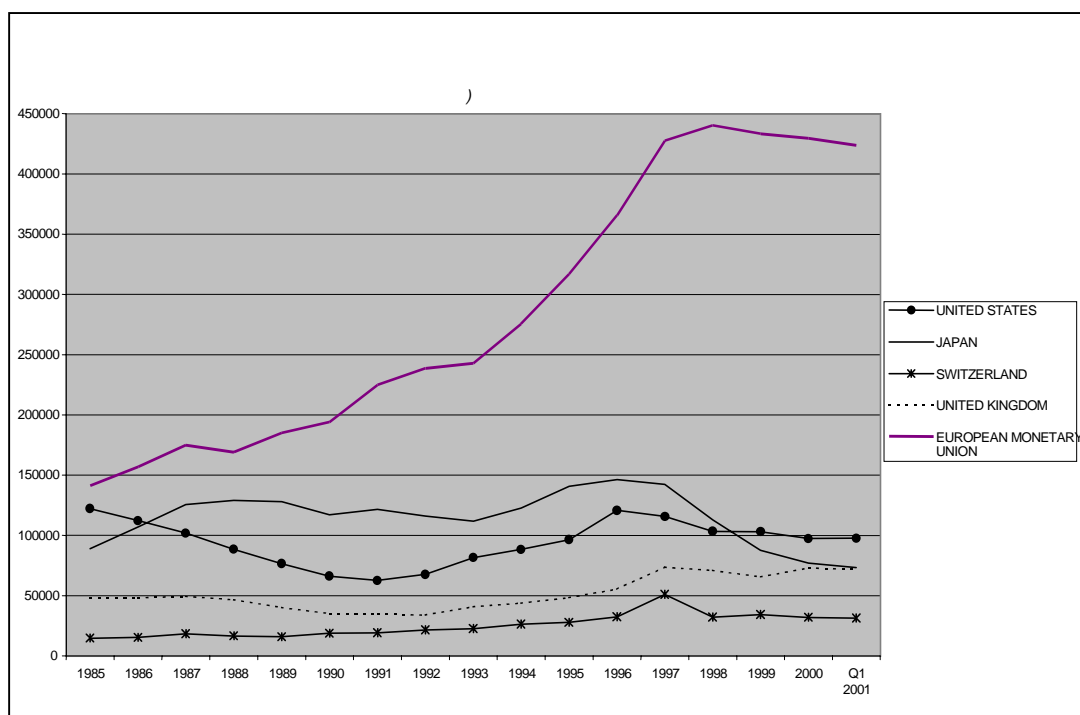
Source: BIS (2001c)

One of the main inducements for the European banks worldwide expansion has been a need to diversify (BIS, 1998). This involved seeking business in areas other than those in which European banks have traditionally had a dominant role, i.e. Africa, Central and Eastern Europe and the Middle East. This diversification strategy produced tangible results during the 1990s, when European institutions reached a preeminent position in Latin America and in the Asia-Pacific region, at the expense of the U.S. and Japanese banks, respectively.

By early 2001, over 34% of the balances of bank loans to the Asia-Pacific region originated from euro-zone banks, far exceeding Japan's share in this region (table 9). European banking institutions, however, are not noted for a specialization in that area. Loans extended to the Asia-Pacific region by euro-zone banks are 15 percentage points below the average of total euro-zone loans to all developing countries. Conversely, Japanese banks have a clear specialization in the Asia-Pacific region. Their loans to the region are, on average, 11% greater than those they extend to the entire developing world.

Table 9

CONSOLIDATED INTERNATIONAL CLAIMS OF REPORTING BANKS ON INDIVIDUAL DEVELOPING COUNTRIES BY NATIONALITY OF REPORTING BANKS END - MARCH 2001

(In %)

	Total	Japan	United States	M.E.U.	Switzerland	United Kingdom	Other
Developing countries	**100.00**	**8.56**	**11.40**	**49.47**	**3.67**	**8.37**	**18.53**
i) Africa & Middle East	100.00	5.08	7.73	51.75	5.89	12.08	17.48
ii) Asia & Pacific	100.00	19.48	7.86	34.67	3.94	8.98	25.07
iii) Europe	100.00	2.25	5.46	67.06	3.10	4.10	18.03
iv) Latin America/Caribbean	100.00	3.77	20.01	51.19	2.87	9.01	13.15
Differences with regard to the average structure of the developing countries							
i) Africa & Middle East		-3.48	-3.67	**2.28**	**2.22**	**3.71**	-1.05
ii) Asia & Pacific		**10.92**	-3.54	-14.80	**0.27**	**0.61**	**6.54**
iii) Europe		-6.31	-5.94	**17.60**	-0.57	-4.27	-0.50
iv) Latin America/Caribbean		-4.79	**8.61**	**1.72**	-0.80	**0.64**	-5.38
Developing countries	**100.00**	100.00	100.00	100.00	100.00	100.00	100.00
i) Africa & Middle East	**13.72**	8.14	9.30	14.35	22.02	19.79	12.94
ii) Asia & Pacific	**31.41**	71.48	21.66	22.01	33.74	33.70	42.50
iii) Europe	**21.37**	5.62	10.24	28.97	18.03	10.45	20.79
iv) Latin America/Caribbean	**33.50**	14.76	58.81	34.67	26.21	36.05	23.77
Differences with regard to the geographical structure of all loans extended to developing countries							
i) Africa & Middle East		-5.58	-4.42	**0.63**	**8.30**	**6.07**	-0.78
ii) Asia & Pacific		**40.06**	-9.75	-9.40	**2.32**	**2.29**	**11.09**
iii) Europe		-15.75	-11.13	**7.60**	-3.33	-10.91	-0.58
iv) Latin America/Caribbean		-18.74	**25.30**	**1.17**	-7.29	**2.55**	-9.73

Significant positive differences are highlighted in boldface

Source: BIS (2001c)

In terms of the geographic composition of the loan portfolio, European banks make 22% of their loans to this region. This represents a share of 9.8 percentage points lower than the composition of the total world portfolio of BIS-reporting banks, in which 31.4% is made up of credits to the Asia-Pacific countries. Japanese banks, on the other hand, devote 71% of their loans to the Asian region. This is 40 percentage points more than the weight of the Asian-Pacific region in the overall portfolio of loans to the developing countries made by all reporting banks.

Focusing more specifically on Latin America, at the beginning of 2001, 51% of the bank loans received were from euro-zone institutions, as opposed to 20% from U.S. banks. In terms of geographic specialization, however, credits extended by U.S. institutions were more concentrated in the Latin America. Indeed, the credit volume directed at Latin America was 8.6 percentage points higher than the average structure of the loans received by developing countries from U.S. banks. Moreover, U.S. banks devoted almost 59% of their loans to the Latin American region—i.e., 25 percentage points more than the weight of Latin America in the overall "developing country" portfolio of the reporting banks.

By virtue of the sharp rise in of European bank credits to Latin America during the 1990s, all the large and medium-sized countries of the region (and many of the small ones) show a bank borrowing structure in which euro zone institutions are predominant. In Argentina, as in Brazil, Mexico, Venezuela, Chile, Colombia or Peru, for example, the euro zone institutions were the source of at least 40% of total bank loans in December 2000 (**table 10**).

**CONSOLIDATED INTERNATIONAL CLAIMS OF REPORTING BANKS ON
INDIVIDUAL LATIN AMERICAN COUNTRIES BY NATIONALITY
OF REPORTING BANKS, END-DECEMBER 2000**

(In %)

	United States	European Monetary Union	Japan	Other
Cuba	0.00	**79.87**	3.08	17.05
Belize	2.17	**75.85**	0.00	21.98
Peru	9.71	**75.50**	1.12	13.67
Paraguay	6.74	**74.59**	0.00	18.68
Bolivia	18.18	**71.79**	0.08	9.95
Uruguay	16.56	**65.90**	0.20	17.34
Surinam	31.48	**61.11**	0.00	7.41
Argentina	16.21	**57.77**	2.66	23.36
Chile	16.55	**57.15**	5.24	21.06
Nicaragua	29.05	**52.70**	4.98	13.28
Haiti	27.96	**50.54**	0.00	21.51
Venezuela	21.18	**50.31**	4.04	24.47
Mexico	23.85	**48.01**	4.00	24.13
Colombia	20.59	**47.17**	9.69	22.56
Guyana	13.24	**47.06**	0.00	39.71
Trinidad and Tobago	11.86	**47.03**	2.74	38.37
Brazil	21.23	**44.90**	4.21	29.66
Dominica	0.00	**43.06**	0.00	56.94
Dominican Republic	27.59	39.27	0.00	33.14
Honduras	34.65	37.91	0.00	27.44
Ecuador	33.37	36.31	4.12	26.20
El Salvador	38.39	30.04	0.00	31.58
St Lucia	0.00	29.55	0.00	70.45
Costa Rica	30.37	28.98	1.53	39.12
St Vincent	0.00	26.71	0.00	73.29
Guatemala	51.18	25.79	0.00	23.03
Grenada	0.00	18.42	0.00	81.58
Jamaica	24.70	18.03	0.85	56.41
Residual	*40.01*	*1.22*	*0.00*	*58.77*
TOTAL	**19.88**	**51.50**	**3.65**	**24.97**

Source: BIS (2001a).

3.2. Banking flows and foreign direct investment from Europe

As part of the geographic diversification implemented in the 1990s, the expansion of European banking loans to the Latin American region was accompanied by an increase in European foreign direct investment. More precisely, the robust growth in European-originated bank credits to Latin America coincided with the previously mentioned acceleration of European investments in the region between 1993 and 1997 (**table 11**). In an August 1998 report, the BIS noted that the strong penetration of European banks in the Asian and, more importantly, Latin American markets is explained both by favorable prospects in terms of overall growth and financial yield and by the fact that the European banking institutions (excluding British banks) have followed the lead of the large European industrial and trading corporations (i.e., their main clients in Europe) in establishing themselves in Latin America and, to a lesser degree, Asia.

This interpretation appears to be confirmed by the strong correlation found between the growth in FDI from Europe in Latin America and the notable increase of European bank loans to the Latin America. This relationship is significantly stronger than the correlation observed between the growth of U.S. foreign investment and of banking flows of U.S. origin (**figure 7**).

Table 11

**CONTRIBUTION BY REGION TO THE INCREASE IN FDI AND NET
BANKING FLOWS IN LATIN AMERICA(1) 1993-1997**

(in billions of dollars and in % of total increase)

	Contribution to FDI		Contribution to bank credits	
	Amounts	%	Amounts	%
European Monetary Union	10.89	77.88	62.42	75.71
United States	0.92	6.58	9.28	11.25
Switzerland	-1.42	-10.19	8.99	10.91
United Kingdom	2.40	17.17	5.81	7.05
Japan	1.20	8.57	-4.04	-4.90

(1) Change in flows, disregarding existing stocks.
Source: Authors' calculations based on IDB/IRELA and BIS (2001a) data.

Figure 7

**FDI AND BANK LOAN FLOWS IN LATIN AMERICA:
A CORRELATION ANALYSIS**

(billions of dollars)
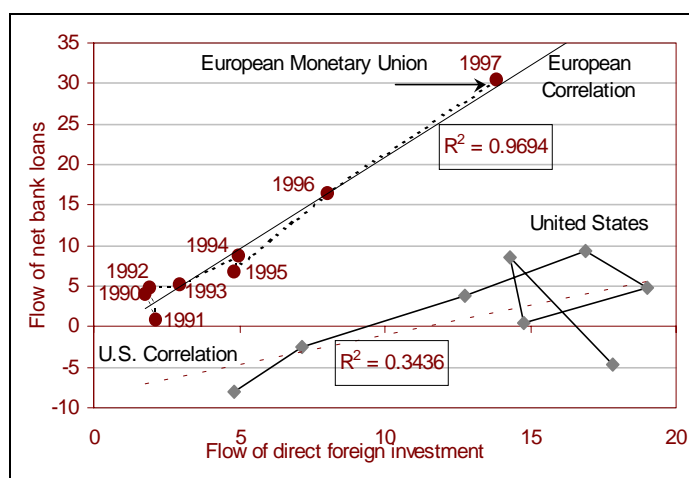
Source: Authors' calculations based on BIS (2001a), SELA (2000)

There is, therefore, a clear divergence between the United States and the euro-zone countries in terms of the recent expansion of their financial and trade activities in Latin America. One of the reasons is the existence of institutional differences between the U.S. and European financial systems. In the U.S. there is a predominance of direct financing of loss-making agents through the capital market, which has a decisive weight and influence at an international level, whereas in continental Europe—in spite of a recent expansion in direct financing—indirect financing through banking systems still prevails. This helps explain the substantial international development of the European banking systems that, as can be seen in Latin America, goes hand in hand with the internationalization of European firms.

The strong international expansion of the European banks may well contribute to the development of the euro as an international currency.

The increase of loans to emerging countries, and in particular to Latin America, during the 1990s represents a new stage of the internationalization process that began in the 1970s. European banks have been playing a major role in the financing of emerging and developing countries for three decades.

At first, most European bank loans were in dollars, fulfilling a transformation function to the benefit of non-resident agents: long-term loans of euro-dollars borrowed on a short-term basis. During the 1990s, credit activities in Latin America continued to be mostly in dollars. With the creation of the single currency, however, it is possible that European banks might extend loans

largely in euros, which would involve a process of currency creation (and not only transformation) that would help feed the international markets in "euro" liquidity[7]. The bank-financing channel of the world economy might thus favor a greater international use of the euro.

Two highly likely implications can be identified with regard to European bank financing of Latin America associated with FDI of European origin: (1) European bank financing is a generator of external debt for the countries of the region, which creates a dual force linking Europe and Latin America through both productive investment and financial activities. (2) A greater use of the euro as the currency between parent companies and subsidiaries, and a larger proportion of credits in that currency, could reduce or eliminate the exchange-rate risk for the companies and banks involved.

4. Growing share of euro-denominated bond issues

The strong expansion of credits from European commercial banks to Latin America is not the only relevant aspect of the recent dynamics of European-Latin American financial relations. These have also been characterized by an increase in international bond issues—crucial source of debt-generating external financing of Latin America in the past few years—, in which euro-denominated loans have surged.

This expansion is common to the group of developing countries that have participated significantly in the growth of the euro-denominated bond market over the past few years. As shown in figure 7, the eurocurrency share of the total issues of those countries grew uninterruptedly since 1994, continued to increase in 1999, and then declined slightly in 2000. In spite of this decline, however, which resulted from a reduction in the issue of sovereign bonds in euros (which represented one-third of the total in 2000), private-sector bond issues have continued to expand. The share of the latter doubled in 2000, from 6% to 12% of the total, at the expense of issues in dollars (figure 8). With regard to sovereign issues, the drop recorded in 2000 mainly favored issues in yen, because the share of issues in dollars also declined. The percentage of U.S. issues in the total issues of developing countries has reached its lowest point since 1993, if we exclude the year 1995 (figures 9 and 10).

Figure 8
DEVELOPMENT OF THE EURO SHARE OF BOND ISSUES OF DEVELOPING COUNTRIES
(% of total issues by type of debtor)

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Source: Bondware.

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[7]   In this event it can be expected that countries borrowing in a specific currency will also hold deposits denominated in that same currency (Plihon, 1994).

Figure 9
PRIVATE-SECTOR BOND ISSUES BY CURRENCY
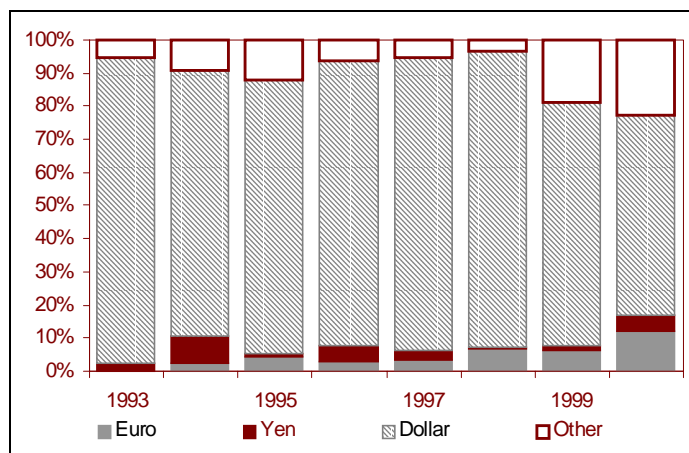
Figure 10
SOVEREIGN BOND ISSUES BY CURRENCY

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Latin America has experienced an increase in the share of euro-denominated bonds in total issues since 1994 (**figure 11**). **Figure 11** also shows that the share of bonds issued in euros by the public sector, which had been experiencing strong growth since 1994 (in spite of the decline recorded in 1997), dropped slightly in 2000. Conversely, the share of bonds issued in euros in the total international issues of the Latin American private sector has continued to rise. In sum, as of 1999 there has been a widening of the gap between the Latin American share of euro-denominated bond issues the total issued by those countries (**figure 12**). With a share that in 2000 reached 60% of developing countries, Latin America has become an active participant in the internationalization of the euro as a borrowing currency.

Figure 11
DEVELOPMENT OF THE EURO SHARE IN LATIN AMERICAN BOND ISSUES
(% of total issues by type of debtor)
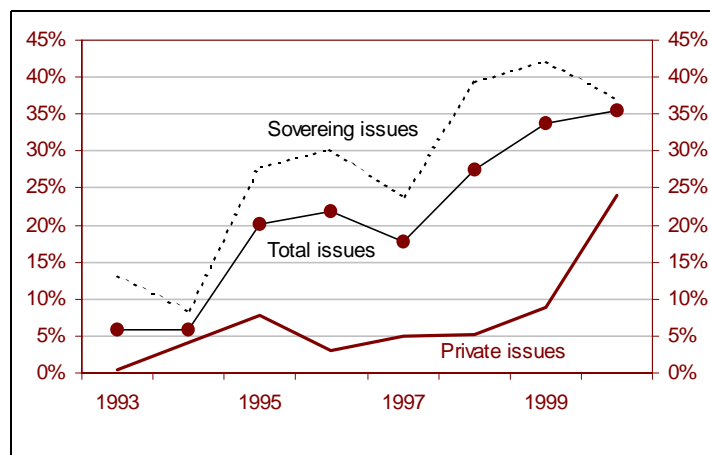
Figure 12

DEVELOPMENT OF LATIN AMERICAN SHARE IN BOND ISSUES

(private and government, % of total worldwide issues)
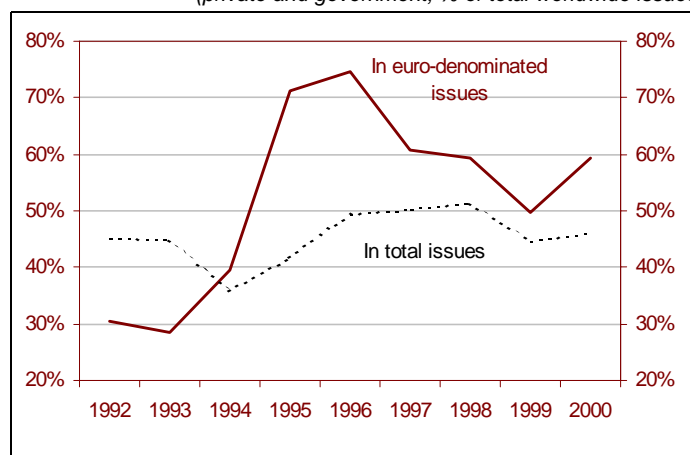
The continuation of this process—increased borrowing by emerging countries and, in particular, by Latin American countries—has implications on two different but interconnected levels: (1) liquidity in the emerging component of the euro-denominated bond market and (2) the management of the currency composition of the external debt.

The growth of emerging issues in euros has generated a single market that replaces the segmented markets in the previous currencies (German mark, French franc, Italian lira…). This will surely favor the consolidation of a more liquid and deeper market. However, the process is still in its initial stages. The liquidity of the euro-denominated emerging-bond market is still limited for two reasons: (1) In the euro zone, a major proportion of investors in this type of securities consist of fund-administering institutions, which does not favor the development of a secondary market for the paper. (2) More importantly, the average size of emerging issues in euros is relatively small compared with those issued in dollars. Although 50% of the issues of emerging sovereign bonds carried out in 2000 and 2001 were denominated in euros, the average amount of those issues is significantly lower than that of dollars issues (**table 12**). In Latin America, in turn, the average amounts are systematically higher than those of all developing countries. As observed in **table 12**,

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however, up to now there have never been any "jumbo" issues in euros (exceeding one billion dollars). Thus, the benchmark of these markets consists of securities denominated in U.S. dollars[8].

Table 12

NUMBER AND AMOUNTS OF EMERGING SOVEREIGN BOND ISSUES IN 2000 AND 2001(1)

(in billions of dollars and in %)

	Quantity	Amount	Average amount	Maximum amount	Minimum amount	Quantity %	Amount %
2000							
TOTAL	**82**	**40.95**	**0.50**	**1.50**	**0.04**	**100.00**	**100.00**
Dollar	29	20.08	**0.69**	1.50	**0.10**	35.37	49.02
Euro	41	15.73	**0.38**	0.99	0.04	50.00	38.41
Yen	12	5.15	**0.43**	0.57	**0.14**	14.63	12.57
Latin America	**42**	23.35	**0.56**	**1.50**	**0.09**	**100.00**	**100.00**
Dollar	15	11.48	**0.77**	1.50	**0.10**	35.71	49.14
Euro	22	9.17	**0.42**	0.99	0.09	52.38	39.29
Yen	5	2.70	**0.54**	0.57	**0.47**	11.90	11.57
2001							
TOTAL	**54**	**20.12**	**0.37**	**1.50**	**0.05**	**100.00**	**100.00**
Dollar	21	9.90	**0.47**	1.50	**0.05**	38.89	49.20
Euro	27	8.40	**0.31**	0.94	0.05	50.00	41.73
Yen	6	1.83	**0.30**	0.65	**0.17**	11.11	9.07
Latin America	**33**	12.90	**0.39**	**1.50**	**0.05**	**100.00**	**100.00**
Dollar	14	6.95	**0.50**	1.50	**0.10**	42.42	53.88
Euro	16	4.80	**0.30**	0.94	0.05	48.48	37.19
Yen	3	1.15	**0.38**	0.65	**0.24**	9.09	8.93

Note: Issues up to 09/07/2001. Excludes swap.

Source: CDC IXIS, Department of Economic and Financial Analysis, Country-Risk and Emerging-Markets Unit.

The growing weight of foreign bonds denominated in euros leads us to give more careful consideration to the impact on the debt service of interest rate performance in the euro zone, as well as the management policy for currency borrowing. This latter subject, which involves the optimal currency composition of the external debt, is addressed below.

5.   External-debt management: currency composition

The dollar is the main external-debt issuing currency of all countries in Latin America and the Caribbean (**table 13**). However, if the euro continues to develop as an international borrowing currency, its weight in the structure of external bonds will tend to increase. This makes it necessary to pay closer attention to the management of the currency composition of the external debt.

In principle, the management of the currency composition of the debt consists in considering simultaneously the trade balance and the financial costs resulting from external borrowing in order to minimize losses arising from exchange-rate fluctuations between the international currencies. Obviously, the problem would not arise if only one currency existed for transaction and international financing.

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[8]   Some market operators consider that a swap involving securities euro-denominated, similar to the mega-swap (in dollars) carried out by Argentina at the beginning of June 2001, could create a benchmark in the eurocurrency and accelerate the development of liquidity in the emerging euro-denominated bond markets.

Table 13

STRUCTURE OF THE LATIN AMERICAN DEBT, BY CURRENCY

(1999, % of the total debt)

	Dollar	Euro	Yen	Other
Argentina	64.10	11.30	5.70	18.90
Barbados	46.80	0.00	0.00	53.20
Bolivia	46.90	9.50	4.40	39.20
Brazil	70.80	4.30	5.30	19.60
Chile	83.20	1.70	6.50	8.60
Colombia	77.60	2.60	4.80	15.00
Costa Rica	72.30	0.70	5.60	21.40
Dominica	71.80	8.20	0.80	19.20
Dominican Republic	72.60	2.40	6.60	18.40
Ecuador	83.00	2.00	6.10	8.90
El Salvador	68.30	4.70	5.60	21.40
Grenada	65.10	1.30	0.00	33.60
Guatemala	75.30	4.40	2.60	17.70
Guyana	66.50	1.00	0.00	32.50
Haiti	80.60	2.30	0.00	17.10
Honduras	62.90	4.20	9.40	23.50
Jamaica	57.70	2.50	8.40	31.40
Mexico	77.30	5.40	8.50	8.80
Nicaragua	70.60	7.60	2.40	19.40
Panama	90.40	0.10	2.20	7.30
Paraguay	46.60	5.10	20.80	27.50
Peru	72.60	4.10	11.70	11.60
Trinidad and Tobago	61.00	0.80	4.90	33.30
Uruguay	76.80	4.10	4.60	14.50
Venezuela	80.40	7.90	3.00	8.70

Source: World Bank (WDF, 2001).

Neither would there be any problem in managing the currency composition of the debt if the entire external debt of a country could be permanently keyed to the changes in international exchange rate, thus making it possible to achieve a debt profile that would guarantee minimum losses due to exchange rate instability. The financial cost of this type of strategy is, however, theoretically higher (liquidity risks and resulting transaction costs of a permanent swap) than the benefit that could be derived from short-term external-debt management-even more so if the amounts involved represent a sizeable proportion of the gross domestic product of a country, as occurs in a most cases.

A first approach to the problem of the optimal currency composition of the external debt (selection of a portfolio made up of debt in dollars and euros, for example) is to determine a borrowing structure that would minimize fluctuations in income from foreign trade, net of interest—as do Levy Yeyati and Sturzenegger (1999c) by estimating of a model proposed by Claessens (1992).

In this approach, which assumes a framework of invariable exchange-rate arrangements, the optimization strategy necessarily involves the existence of a stable relationship between trade balance and financial costs. The existence of wide international fluctuations of the nominal and real variables during the 1990s, however, has not provided a stable context in which to implement an optimum debt management. Thus, the calculations made by Levy Yeyati and Sturzenegger for the 1992-1998 period (using a portfolio made up of debt in dollars, marks and yen) do not show a stable structure of relations between trade and indebtedness that would have made it possible to

minimize the losses resulting from fluctuations in the international currencies. In fact, what is apparent is that debt diversification is due to specific debt issuance conditions in the different markets (different transaction costs, depth and liquidity, spreads, etc.) rather than to a defined strategy to optimize the currency composition.

There is another way to address the problem of the currency composition of the debt and its relationship with the geographical structure of foreign trade. According to Bénassy-Quéré and Lahrèche-Revil (1999), the question that should be asked is: what would be the optimum anchor basket that would make it possible to minimize the losses arising from fluctuations between international currencies, given a geographic structure of foreign trade and a borrowing structure inherited from past decisions?

The analysis by these authors is an extension of an approach to the fundamental equilibrium exchange rate proposed by Williamson (1994). This approach suggests that the monetary authorities should seek a real exchange-rate level that would ensure a current-account balance consistent with external financing and full-employment needs. Once the exchange-rate reaches its level of fundamental equilibrium, the exchange policy should focus on achieving a stable effective exchange rate. As a result, the national currency should be anchored in real terms to a basket of currencies weighted by the trade structure.

If, however, the external debt of a country is denominated in currencies that are different from those used in trade transactions, the financing needs do not depend exclusively on their external competitiveness. Thus, according to Bénassy-Quéré and Lahrèche-Revil (1999), the authorities should define a real exchange-rate target that would meet two objectives: trade competitiveness and minimization of costs linked to fluctuations in the external debt service.

If we consider that the most likely scenario is a progression toward highly volatile, bipolar and asymmetrical international monetary arrangements (dollar and euro as financing currencies, dollar as the transaction and invoicing currency) and that external borrowing in euros will tend to increase in developing countries for reasons of diversification, the dollar/euro fluctuations will have a strong nominal and real impact on the economies of these countries.

This type of approach, which presupposes a theoretical and regulatory discussion regarding the management of exchange-rate arrangements, goes beyond simply optimizing the currency composition of the external debt. This discussion is relevant to Latin American countries, in particular to those that have greater geographical and monetary diversification in their trade and borrowing structures[9].

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[9]   This seems to be the objective of Argentina, when she decided in 2001 to include the euro as an anchor currency in its currency board whenever the euro reaches a unit exchange-rate against the dollar.

IV. Emergence of the euro and the unit-of-account function: implications for Latin America

The studies on the creation of the euro and its prospect as an international currency have larglye focused on its functions as a medium of payment, financing and borrowing. Recently, the management of international reserves and the potential role of the euro as a reserve currency have also begun to be studied (Alogoskoufis and Portes, 1997; most importantly, Eichengreen and Mathieson, 2000). Conversely, the unit-of-account function is often neglected, probably because currency price-setting in international trade is particularly subject to inertia resulting from the existence of grid externalities. Another factor that is usually put forward to explain this is that invoicing currencies appear to derive their use from their other functions explanation usually offered (Bénassy-Quéré and Cœuré, 2000).

As previously mentioned, the unit-of-account function not only has to do with price-setting in international trade; it also concerns the use of international currencies as reference (anchor) currencies, which is one of the crucial functions in the internationalization process. In the short term, it will be very difficult for the euro to compete with the dollar as a worldwide anchor currency, given that decisions in this sphere are linked to the type of integration—in both trade (geographic pattern of trade flows) and financing (borrowing currencies, FDIsources, etc.) —as well as to trade practices (as previously mentioned, most commodities trade is conducted in dollars).

In particular, the existence of strong inertia in trade and financial practices hinders a more rapid development of the euro as an international currency. In any event, the use of the euro as an anchor currency of third countries can be expected to increase in the medium and long term.

In this chapter, we will: (1) address the issue of the *de facto* determination of currency anchors, as against the officially-stated anchors, i.e., those published by the IMF (in its Annual Report on Exchange Arrangements and Exchange Restrictions); (2) study the real and financial determinants of the options adopted by developing countries in terms of *de facto* anchoring on the basis of an econometric analysis conducted for 93 economies; (3) build a typology of the analyzed countries; and (4) explore ways in which the euro could be adopted as an anchor currency a cross Latin America.

1.   *De facto* anchoring arrangements: methodology

Following the approach proposed by Bénassy—Quéré and Cœuré (2000), an estimate is made of *de facto* exchange arrangements through the use of econometric equations based on the generalized moments method (see **Annex 1**). The implicit anchors of 111 currencies have been estimated on the basis of weekly data both before and after the financial crises of the emerging countries (1997-98).

The results show that the proportion of currencies with *de facto* anchoring to the dollar is much higher (50%) than could be surmised from the official data published by the IMF (see **tables 14 and 15**). This phenomenon has continued after the Asian crisis, suggesting that, at least in the short term, the current system has not changed as substantially as is usually suggested (i.e., decline in peg to a reference currencies and generalization of pure floats). Therefore, pure floats are much less frequent *de facto* (4%) than *de jure* (30%).

These results converge in part with those obtained by Levy Yeyati and Sturzenegger (1999b), who observed numerous *de facto* anchors. In addition, there does not appear to have been a decline in the so-called intermediate arrangements (one of whose characteristics of which is an anchor to a basket of currencies). This has been demonstrated by Masson (2000) using a dynamic analysis of the transitions between exchange arrangements.

Table 14

OFFICIAL EXCHANGE ARRANGEMENTS AND THEIR EVOLUTION

(% of all IMF member country currencies, in December of each year)

Exchange arrangements	1983	1988	1994	1999
Number of currencies	*146*	*152*	*181*	*187*
Fixed anchor to one currency (including currency boards)	**35.6**	**38.3**	**26.0**	**30.0**
Dollar	23.3	25.7	13.8	15.0
Franc, mark, euro	8.9	9.2	8.3	12.3
Other	3.4	3.4	3.9	2.7
Fixed anchor to a basket of currencies	**27.4**	**25.7**	**13.3**	**9.6**
SDR	8.9	5.3	1.7	3.2
Ecu	0.7	0.7	0.6	0.0
Other	17.8	19.7	11.0	6.4
Limited flexibility	**11.0**	**7.2**	**7.2**	**5.9**
European exchange mechanism	4.8	4.6	5.0	1.1
Other	6.2	2.6	2.2	4.8
Limited float	**19.9**	**17.8**	**19.9**	**23.0**
Free float	**6.1**	**11.2**	**33.7**	**31.6**
TOTAL	**100.0**	**100.0**	**100.0**	**100.0**

Source: IMF, Annual Report on Exchange Arrangements and Exchange Restrictions, several numbers.

Table 15
DE FACTO **EXCHANGE ARRANGEMENTS**

(% of all currencies analyzed)

	April 1995-June 1997 (prior to the Asian crisis)	**October 1998-December 1999** (after the Asian crisis)
Number of currencies	*107.0*	*107.0*
Unit anchor to one currency	**61.8**	**59.8**
Dollar	50.6	49.5
Euro	10.3	10.3
Yen	0.9	0.0
Partial anchor to one currency	**13.0**	**9.3**
Dollar	12.1	6.5
Euro	0.9	1.9
Yen	0.0	0.9
Anchor to a basket of currencies	**20.5**	**27.1**
Dollar/euro	12.1	14.0
Dollar/yen	5.6	2.8
Euro/yen	1.9	2.8
Euro/dollar/yen	0.9	7.5
Free float	**4.7**	**3.7**
TOTAL	**100.0**	**100.0**

Note: the 14 African countries of the franc zone are treated as a single country.
Source: Bénassy-Quéré and Coeuré (2000).

In sum, according to the approach adopted in this study, the international monetary system does not seem to be evolving toward a general use of floats. Moreover, Bénassy—Quéré and Cœuré (2000) note that the IMS is still a long way from a configuration of different currency blocks of comparable size.

2.   Financial and trade determinants of *de facto* anchors

On the basis of the results presented in the previous section, we will now focus on the real and financial determinants of the of *de facto* anchoring arrangements adopted by the 93 countries considered. **Table 16** shows the correlation between the anchoring coefficients and the trade, financial and geographic variables[10].

This table shows, mainly, that the anchoring coefficients are correlated with the trade and financial variables. The use of the euro as a *de facto* anchor currency correlates significantly with the use of the euro as a borrowing currency (0.197) and with the geographic pattern of trade (0.458), i.e. those cases in which Europe is predominant as a client and supplier of the countries considered. It is not surprising, therefore, to find that the countries of Europe (Central, East and South), as well as the African countries of the franc zone, have a strong correlation with the use of the euro as a *de facto* anchor currency (either as the sole currency or as the dominant currency in anchor baskets).

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[10]   The anchoring coefficients are taken from Bénassy–Quéré and Cœuré (2000). The following binary variables were associated with those variables: Dolbin= 1 if the coefficient is equal to or higher than 0.5, 0 if it is lower; Eurobin= 1 if the coefficient is equal to or higher than 0.3, 0 if it is lower; Yenbin= 1 if the coefficient is equal to or higher than 0.1, 0 if it is lower. The "oil-exporting" binary variable is assigned to countries whose oil sales represent over 10% of their total exports. The "dollarised" binary variable is attributed to countries where the dollar share in M3 is high, following IMF typology. Geographical distances are measured in kilometres (km) between ports or capitals.

Table 16

TRADE, DEBT AND DE-FACTO ANCHORING ARRANGEMENTS

Correlation table

	Dollar	Euro	Yen	Dolbin	Eurobin	Yenbin
Dollar	1.000	-0.969	-0.612	0.911	-0.937	-0.589
Euro	-0.969	1.000	0.396	-0.859	0.884	0.393
Yen	-0.612	0.396	1.000	-0.634	0.649	0.927
Dolbin	0.911	-0.859	-0.634	1.000	-0.865	-0.602
Eurobin	-0.937	0.884	0.649	-0.865	1.000	0.652
Yenbin	-0.589	0.393	0.927	-0.602	0.652	1.000
Debt structure by currency						
In Dollars	0.019	-0.044	0.069	-0.032	-0.021	0.096
In Euros	-0.272	0.197	0.378	-0.356	0.292	0.350
In Yens	0.205	-0.144	-0.292	0.213	-0.142	-0.251
Degree of dollarisation of the economies						
Dollarised	0.089	-0.016	-0.276	0.166	-0.154	-0.206
Oil exports						
Oil-exporting	0.140	-0.129	-0.104	0.144	-0.202	-0.155
Foreign trade structure						
With United States	0.355	-0.352	-0.195	0.370	-0.371	-0.198
With Japan	0.251	-0.240	-0.164	0.226	-0.222	-0.178
With Europe	-0.451	0.458	0.211	-0.465	0.439	0.159

Geography and anchoring arrangements

Correlations table

	Dollar	Euro	Yen	Dolbin	Eurobin	Yenbin
Geographic distances						
kmUS	0.017	-0.019	-0.005	-0.032	0.020	-0.043
kmJapan	-0.089	0.017	0.274	-0.143	0.092	0.241
kmEurope	0.446	-0.468	-0.162	0.454	-0.415	-0.174
Geographic areas						
Latin America	0.341	-0.331	-0.208	0.398	-0.360	-0.179
Central	0.202	-0.199	-0.112	0.276	-0.195	-0.032
South	0.245	-0.234	-0.162	0.240	-0.278	-0.210
Asia	0.312	-0.284	-0.252	0.299	-0.287	-0.261
Middle East	0.153	-0.132	-0.146	0.139	-0.161	-0.122
Europe	-0.358	0.456	-0.127	-0.209	0.273	-0.087
Africa	-0.364	0.253	0.539	-0.506	0.424	0.481
Africa-CFA	-0.532	0.365	0.805	-0.668	0.578	0.765
Africa-NCFA	0.047	-0.029	-0.085	0.001	-0.017	-0.118

Note: Figures in boldface indicate statistically significant correlations. CFA: CFA franc zone
CNFA: other African countries.
Sources: Trade: DOTS-IMF (2000), Debt: World Bank (WDI 2000), Dollarisation: IMF 174
(1998), Exchange arrangements: Bénassy-Quéré (2000).

To complete the analysis, we conducted an econometric probability study (**table 17**).

Table 17

PROBABILITY OF USING AN INTERNATIONAL CURRENCY

	Dollar			Euro			Yen		
	Coef.	Z-Stat	Proba.	Coef.	Z-Stat	Proba.	Coef.	Z-Stat	Proba.
Constant	1.40	1.22	0.222	-0.32	-0.36	0.716	-0.66	-0.57	0.568
Direction of trade									
With Japan	0.27	2.30	0.022	-0.19	-2.64	0.008	-0.03	-0.35	0.724
With Europe	-0.04	-3.04	0.002	0.03	2.20	0.028	-0.03	-2.11	0.035
With USA	0.04	2.12	0.034	-0.04	-2.52	0.012	-0.09	-3.59	0.000
Debt composition by currency									
In dollars	0.00	0.034	0.973	-0.01	-0.44	0.660	0.06	2.42	0.015
In euros	-0.10	-3.441	0.001	0.06	2.70	0.007	0.16	3.57	0.000
In yen	0.12	3.501	0.001	-0.06	-2.33	0.020	-0.90	-3.75	0.000
Other determinants									
Oil-exporting	1.82	2.79	0.005	-1.26	-2.15	0.032	-1.78	-2.07	0.039
Dollarised	0.21	0.43	0.666	-0.19	-0.46	0.645	-1.70	-2.43	0.015
Restr. log likelihood		-19.55			-25.44			-13.66	
Probability(LR stat)		0.00			0.00			0.00	
Obs with Dep=0		27.00			58.00			68.00	
Obs with Dep=1		63.00			31.00			18.00	
Included observations		90.00			89.00			86.00	
McFadden R-squared		0.64			0.56			0.69	
% Correct		92.1%			83.9%			72.2%	

Notes: Figures in boldface indicate variables with a significance level at least 90%. Owing to problems multicollinearity between the trade variables and those that represent geographic distances, the latter have not been included in the econometric estimate.

The econometric estimates suggest that the likelihood of using the dollar as an anchor currency increases when the United States is a major trading partner of the country in question. Symmetrically, the likelihood declines when the main partner is Europe.

As regards to the predominance of a currency for borrowing purposes, when a country is indebted mainly in dollars, the likelihood of using the U.S. currency as an anchor is not significant. This is explained by that fact that all the countries of the sample are mainly indebted in dollars. In addition, the likelihood of anchoring a currency to the dollar declines significantly when a major part of the external debt of the country considered is denominated in euros. On the other hand, oil-exporting countries have a strong likelihood of anchoring their currencies to the dollar because the international oil trade is conducted in dollar.

For the yen, the results of the econometric equations concerning with the likelihood of anchoring a currency to the Japanese currency are poor. Thus, being a major trading partner of Japan does not increase the likelihood of using the yen as an anchor currency. Moreover, the likelihood of using the yen as an anchor decreases significantly when the foreign debt of a country is denominated in that currency. Lastly, as would be expected, in the oil-exporting countries and those that are noted for a high degree of dollarisation in their economies, the likelihood of anchoring their currencies to the yen is slight. Several factors serve to explain these econometric results: One is the crisis that has affected Japan since 1990. Another is the strong nominal and real short-term fluctuations experienced by the yen in the past years. Uncertainty regarding the Japanese economy and the volatility of the yen increases transaction costs and exchange-rate risks. Yet another factor is the absence of political will—no to say the hostility—by the Japanese authorities with regard to developing the yen as an international currency.

For the euro, the likelihood that a country will use it as an anchor currency decreases when the trade of a country is conducted mainly with Japan or the United States, and increases if it is conducted with the euro-zone countries, again assuming these countries are major trading partners. Likewise, the results of the exercise confirm that the likelihood of using the euro as an anchor increases when a major part of the external debt of the country considered is denominated in euros. On the other hand, and

inverting the equation that analyses the use of the dollar as an anchor, the likelihood of anchoring a national currency to the euro declines significantly for oil-exporting countries.

3. A typology of countries

The factors considered up to now can be analyzed more deeply in order to identify the positioning of the countries of the sample. To achieve this, a factor analysis of the main components is conducted (see **Annex 2**), making it possible to group the countries with homogenous trade, financial and geographical features. We begin by shoving how we organized the information (**table 18**).

Table 18

INHERENT VALUES AND CORRELATION BETWEEN MAIN VARIABLES AND FACTORS FOR THE FIRST FOUR AXES (SIGNIFICANT)

Inherent values	1	2	3	4
Value	2.40	2.05	1.19	1.02
% variability	26.63	22.75	13.23	11.35
% aggregate	26.63	49.37	62.60	73.95
	factor 1	**factor 2**	**factor 3**	**factor 4**
Trade with USA	**0.75**	-0.09	0.00	**0.45**
Trade with Japan	0.01	**0.70**	-0.03	**-0.35**
Trade with Europe	**-0.72**	**-0.26**	-0.03	**-0.28**
Debt in dollars	**0.61**	**-0.36**	**-0.22**	**-0.39**
Debt in yen	0.06	**0.66**	-0.13	**0.38**
Debt in euros	**-0.60**	**-0.26**	**0.30**	**0.52**
Distance from USA	**-0.40**	**0.65**	**0.42**	-0.15
Distance from Japan	0.12	**-0.55**	**0.71**	-0.14
Distance from Europe	**0.64**	**0.36**	**0.59**	-0.08

The four main axes represent 74% of the aggregate variability. In other words, approximately three-quarters of the total information contained in the variables can be summarized in these four main axes. **Figure 13** makes it possible to identify the opposition between the variables that are more strongly linked to the dollar with regard to those that are more related to the euro.

Figure 13
CIRCLE OF CORRELATION: AXES 1 AND 2
(50%)
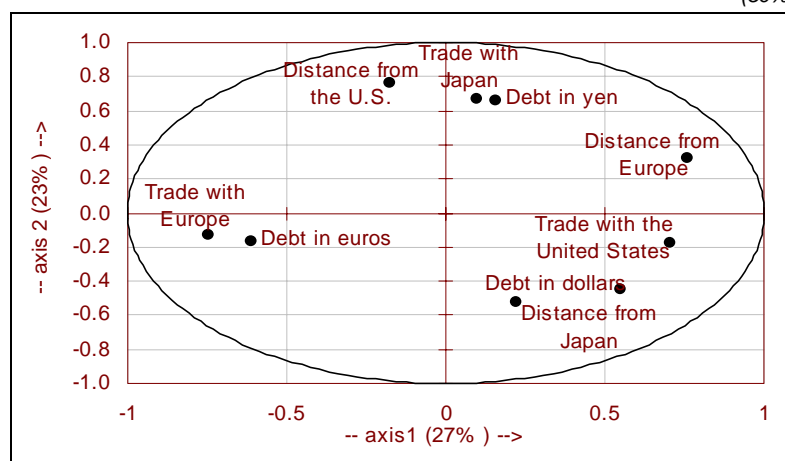
Figure 14 presents the projection of the countries in the factor space defined by the two main axes, which summarize approximately 50% of the total information contained in the variables used. Predictably, a great majority of the Latin American countries are situated the south-eastern region of the factor space dominated by trade with the United States and indebtedness mainly denominated in dollars.

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PROJECTION OF COUNTRIES IN THE FACTOR SPACE DEFINED BY AXES 1 AND 2

(50%)
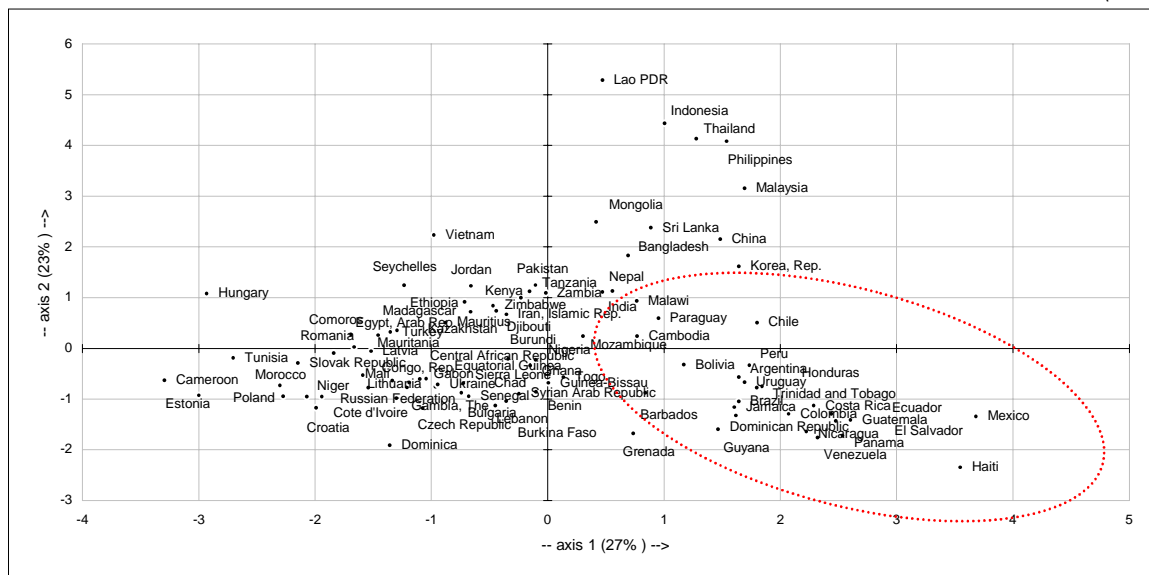
From the country coordinates in the factor space defined by the main four axes, we can identify five different groups (**table 19**).

Table 19

TYPOLOGY OF COUNTRIES ON THE BASIS OF PCFA RESULTS

Classification of observations / Number of countries				
Group 1	Group 2	Group 3	Group 4	Group 5
15	26	16	22	14
Bulgaria	Benin	Bangladesh	Argentina	Cameroon
Croatia	Burkina Faso	Cambodia	Barbados	Congo, Rep.
Czech Rep.	Burundi	China	Bolivia	Cote d'Ivoire
Dominica	Central African Rep.	India	Brazil	Egypt, Arab Rep.
Equatorial Guinea	Chad	Indonesia	Chile	Estonia
Grenada	Comoros	Jordan	Colombia	Gabon
Kazakhstan	Djibouti	Korea, Rep.	Costa Rica	Hungary
Latvia	Ethiopia	Lao PDR	Dominican Rep.	Mali
Lebanon	Gambia, The	Malaysia	Ecuador	Morocco
Lithuania	Ghana	Mongolia	El Salvador	Niger
Poland	Guinea-Bissau	Nepal	Guatemala	Nigeria
Romania	Iran, Islamic Rep.	Pakistan	Guyana	Russian Federation
Slovak Republic	Kenya	Philippines	Haiti	Tunisia
Syrian Arab Rep.	Madagascar	Sri Lanka	Honduras	Turkey
Ukraine	Malawi	Thailand	Jamaica	
	Mauritania	Vietnam	Mexico	
	Mauritius		Nicaragua	
	Mozambique		Panama	
	Paraguay		Peru	
	Senegal		Trinidad and Tobago	
	Seychelles		Uruguay	
	Sierra Leone		Venezuela	
	Tanzania			
	Togo			
	Zambia			
	Zimbabwe			

A second econometric exercise, taking into account the coordinates of the countries on the factor plane (which summarize the information provided by the variables used to calculate the factor axes) confirms that the fact of exporting oil increases the likelihood of anchoring the national currency to the dollar and significantly decreases the likelihood of anchoring it to the euro. In turn, a high degree of dollarisation of the economy strongly increases the likelihood of anchoring the national currency to the dollar and appreciably decreases the likelihood of anchoring it to the euro (**table 20**).

Table 20

PROBABILITY OF USING TO AN INTERNATIONAL CURRENCY

Probit Equations on the Factor Coordinates

	Dollar			Euro			Yen		
	Coef.	Z-Stat	Proba.	Coef.	Z-Stat	Proba.	Coef.	Z-Stat	Proba.
Constant	**1.35**	2.82	**0.005**	-0.45	-1.48	0.139	**-1.28**	-3.04	**0.002**
Direction of trade									
Axis 1	**1.45**	3.65	**0.000**	**-1.02**	-4.50	**0.000**	**-0.26**	-2.13	**0.034**
Axis 2	**2.27**	3.38	**0.001**	**-1.35**	-3.35	**0.001**	**-1.26**	-3.30	**0.001**
Axis 3							**0.83**	2.79	**0.005**
Other determinants									
Oil-exporting	**1.56**	1.87	**0.061**	**-1.67**	-2.41	**0.016**	-0.75	-1.38	0.168
Dollarised	**1.83**	2.74	**0.006**	**-0.99**	-2.12	**0.034**	-0.36	-0.86	0.391
Restr. log likelihood		-54.10			-57.68			-49.16	
Probability(LR stat)		0.00			0.00			0.00	
Obs with Dep=0		27.00			57.00			70.00	
Obs with Dep=1		63.00			31.00			21.00	
Included observations		90.00			88.00			91.00	
McFadden R-squared		0.70			0.60			0.38	
% Correct		95.3%			81.3%			57.1%	

Note: Figures in boldface indicate variables with a significance of at least 90%.

Even more importantly, a final econometric exercise relating the groups of countries and the *de facto* anchoring currencies shows that groups 3 and 4 have a statistically significant relationship with the dollar. At the same time, groups 1 and 2 appear to be areas that anchor to a basket (dollar-euro in group 1, euro-yen in group 2), whereas group 5 is characterized by a statistically significant relationship with the euro. The Latin American and Caribbean countries, included mostly in group 4, are unequivocally part of the dollar zone (**table 21**).

Table 21

GEOGRAPHIC GROUPS AND INTERNATIONAL CURRENCIES

Probit Equations on The Basis of the Typology

	Dollar			Euro			Yen		
	Coef.	Z-Stat	Proba.	Coef.	Z-Stat	Proba.	Coef.	Z-Stat	Proba.
Constant	**-1.16**	-2.77	**0.006**	-0.85	-1.84	0.065	**-0.71**	-1.42	**0.156**
Groups resulting from the typology									
Group 1	**1.23**	2.75	**0.006**	0.87	1.80	0.071	0.52	1.01	0.315
Group 2	Reference			2.56	4.40	0.000	1.34	2.18	0.030
Group 3	**9.56**	22.74	**0.000**	Reference			0.08	0.14	0.889
Group 4	**9.62**	22.89	**0.000**	-0.48	-0.75	0.454	-7.28	-14.89	0.000
Group 5	**0.61**	0.98	**0.329**	1.56	2.70	0.007	Reference		
Other determinants									
Oil-exporting	**0.47**	1.11	**0.269**	-0.39	-1.10	0.271	-0.33	-0.91	0.364
Dollarised	**1.07**	2.07	**0.039**	-1.51	-2.68	0.007	-1.08	-2.46	0.014
Restr. log likelihood		43.56			37.86			24.05	
Probability(LR stat)		0.00			0.00			0.00	
Obs with Dep=0		28.00			59.00			70.00	
Obs with Dep=1		65.00			34.00			23.00	
Included observations		93.00			93.00			93.00	
McFadden R-squared		0.38			0.31			0.23	
% Correct		87.7%			82.4%			21.7%	

Note: Figures in boldface indicate variables with a significance of at least 90%.

4.   Implications for Latin America

In spite of their apparent obviousness, the results obtained are not devoid of interest. Our evidence confirms the logical assumption that the preeminence of the dollar as an anchor currency is favored by inertial factors. In addition, the degree of dollarisation of the economies considered, as well as the intensity of the financial and trade relations with the United States, are factors that reinforce the role of the dollar as an anchor currency. Thus, virtually none of the of the Latin American countries breaks away from the dollar zone. Our analysis shows that the often-mentioned "rifts" between Mexico and the countries of Central America, on one the hand, and the countries of South America, on the other, have little basis in fact.

However the use of the euro as the sole anchor currency is clearly confined to countries whose trade and financial relations with the European monetary union are very close (group 5 of our typology, made up mainly of African and Central/east European countries). As shown by Boone and Maurel (1999), for example, for these countries the euro represents a more "natural" regional anchor currency than the dollar. In particular, the countries of Central and Eastern Europe and those of North Africa, which conduct a sizeable portion of their trade with the euro zone, display activity cycles that coincide quite closely with those of Europe, as well as specialization structures that are relatively similar to those of Western Europe.

Our study also indicates, however, that the euro participates, in numerous cases (groups 1 and 2 of our typology), in *de facto* anchoring baskets. This point is important: in a medium- to long-term perspective, the euro's potential for increasing its share in the anchor baskets cannot be disregarded. Indeed, another result of this study is that the likelihood of anchoring a national currency to the dollar decreases strongly when the share of debts denominated in euros increases.

Now, as previously noted, since 1997 there has been an increase in the euro-denominated bonds as a share of total issues by Latin American countries. **Table 22** shows that, for a group of selected countries—the largest economies of the region—the use of the euro as a borrowing currency is increasing rapidly. More precisely, the euro's share of government-securities issue has reached very high levels in the case of Argentina, Brazil, Colombia and Venezuela.

On the other hand, as was noted in the second part of this study, the international component of private-sector bonds in euros has grown substantially. It is not unlikely, therefore, that Latin American firms may tend progressively toward debt issues denominated in euros. The growing penetration of the European banks in Latin America, the sustained increase of European banking loans to Latin American countries and the boom of foreign investment of European origin in the region could intensity this trend.

Thus, in the medium to long term, the Latin American countries that participate more actively in the process of development of the single European currency as a borrowing currency might consider the use of the euro as a component of anchor currency baskets. Obviously, the dollar would continue to have a preeminent position in these currency baskets, given its entrenchment in Latin America.

DEVELOPMENT OF THE SHARE OF EURO-DENOMINATED ISSUES IN SELECTED COUNTRIES

	Argentina	Brazil	Chile	Colombia	Mexico	Venezuela
Private-sector bond issues						
1993	0.0%	0.0%	0.0%	0.0%	1.0%	0.0%
1994	0.0%	12.9%	0.0%	0.0%	0.0%	0.0%
1995	21.0%	6.5%	0.0%	0.0%	0.0%	0.0%
1996	7.5%	2.2%	0.0%	0.0%	0.0%	0.0%
1997	8.6%	3.9%	0.0%	0.0%	0.0%	0.0%
1998	5.8%	3.6%	0.0%	0.0%	5.4%	0.0%
1999	29.2%	4.5%	18.5%	0.0%	0.0%	0.0%
2000	20.9%	16.8%	0.0%	0.0%	40.1%	0.0%
Government bond issues						
1993	28.2%	0.0%	0.0%	0.0%	4.5%	14.4%
1994	22.4%	0.0%	0.0%	0.0%	0.0%	0.0%
1995	37.8%	34.7%	0.0%	21.1%	12.8%	48.8%
1996	47.2%	30.5%	0.0%	11.0%	18.7%	68.6%
1997	28.4%	29.1%	0.0%	0.0%	33.1%	0.0%
1998	57.0%	32.5%	0.0%	16.0%	16.1%	26.0%
1999	56.1%	58.3%	0.0%	0.0%	13.9%	54.3%
2000	51.7%	25.3%	0.0%	36.1%	19.9%	68.5%
Total bond issues (private-sector+government)						
1993	10.7%	0.0%	0.0%	0.0%	2.3%	13.8%
1994	9.9%	11.5%	0.0%	0.0%	0.0%	0.0%
1995	33.3%	15.7%	0.0%	8.8%	11.1%	48.8%
1996	39.2%	13.6%	0.0%	9.7%	15.7%	68.6%
1997	22.8%	16.6%	0.0%	0.0%	22.5%	0.0%
1998	44.3%	17.7%	0.0%	16.0%	11.9%	26.0%
1999	52.9%	43.2%	12.7%	0.0%	8.3%	54.3%
2000	47.7%	24.4%	0.0%	36.1%	23.7%	68.5%

Sources: CDC IXIS, Department of Economic and Financial Analysis, Country-Risk and Emerging-Markets Unit, Bondware.

This hypothesis is consistent with the analyses in the theoretical and applied literature on the choice of anchor currencies. According to Bénassy-Quéré and Lahrèche-Révil (1999) for instance, the relatively diversified geographic patterns of the foreign trade of some of the large Latin America countries (except of Mexico) could justify the adoption of a basket including the euro. These authors even suggest the hypothesis that countries of the region might create regional monetary unions linked to a basket of currencies including the euro. On the strength of our findings, we might add that a key factor to increase the possibility of adopting baskets including the euro is the intensification of financial relations between Europe and Latin America.

Undoubtedly, anchoring to a single currency—in this case the dollar—represents a very attractive alternative in Latin America. With regard to the prospect of regional monetary unions, the unilateral decision to link the national currency to the dollar is an "easy" solution that involves fewer demands in terms of regional coordination and cooperation. In addition, full participation in the dollar zone may increase foreign investment attracted by exchange-rate risk diversification (Bénassy-Quéré, Fontagné and Lahrèche-Révil, 1999). Still more importantly, a policy of anchoring to a single key currency can easily be tested by the market. Transparency thus contributes to rapidly reinforce the credibility of the countries that adopt this type of policy (Frankel et al, 1999). In turn, in Latin America, where the degree of dollarisation is in fact high and the question of credibility is crucial to many countries, the issue of the dollar's role goes beyond the discussion of a dollar peg. The debate conducted openly since 1999 is increasingly focused on

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the advantages and disadvantages of total dollarisation; that is to say, the replacement—in principle, irreversible—of the national currencies by the dollar, as has recently occurred in Ecuador and El Salvador.

As long as credibility in Latin America is associated with establishing a close relationship with the dollar (in the form of *de jure* anchoring or floating arrangements involving *de facto* anchoring) and, in some way, to the Federal Reserve, the possibility of adopting baskets including the euro will be limited. There are two arguments, however, that can serve to temper this statement:

1. As indicated by Levy Yeyati and Sturzenegger (1999c), with the launching of the euro, the European Central Bank could—if its policy is successful—offer a new alternative in the medium or long term to countries in search of credibility. Although both the Federal Reserve and the ECB are obviously extremely wary of any proposal to share the management of monetary policy with third countries, these authors argue that they might be less reluctant to some type of exchange agreement with certain Latin American countries. The so-called European Monetary System bis (EMS bis), an exchange agreement that links the European Union with other European countries that are applying for membership, represents an interesting antecedent—although of course it is intrinsically inapplicable to other countries or regions.

2. The previously-mentioned factors conducive to adoption of anchor baskets could be strengthened by the medium- to long-term international scenario that is favored in this study. An increasingly bipolar but asymmetrical IMS presupposes high volatility between the two main international currencies. In this context, anchoring exclusively to the dollar could prove fatal for countries that have major trade and financial relations with the euro zone. Conversely, anchoring to a basket that includes the euro would be decisive in reducing vulnerability—and, hence, increase credibility—to abrupt exchanges-rate swings among the main reference currencies. As already mentioned, this was one of the objectives of the decision adopted by Argentina in 2001, which was to anchor the peso to a basket made up of the dollar and the euro whenever these two currencies achieve a one-to-one exchange-rate[11].

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[11]   This text was written before the devaluation of the peso in January 2002 (Note of the Editor)

Conclusion

The internationalization of the euro is in its initial stages and it is therefore difficult to draw any definitive conclusions regarding its scope and its implications for Latin America. Indeed, as indicated at the beginning of this study, the emergence of an internationally used currency is slow and subject to inertial forces. Nonetheless, several fairly robust conclusions can be inferred from the results of our analysis.

First, with regard to the development of the IMS, if one takes into account the initial experience of the euro on the international scene and the teachings of economic theory, the most plausible medium- to long-term scenario seems to be development of an asymmetrical duopoly. This means the euro will come to share the dollar's role as a financial currency, while the U.S. currency will continue to prevail in trade transactions[12]. Even though one can argue with this hypothesis, it seems credible that the dollar will maintain its dominant position for a considerable time, during which there will be a gradually increasing bipolarisation of the IMS. In a context of scant international monetary cooperation, this scenario presupposes high volatility between the two main international currencies, which will be a powerful destabilizing factor for third countries.

Secondly, the first two years of the euro's existence confirm that its growing use in financial operations—which now far outweight

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[12] An asymmetrical duopoly of rivalry between the dollar and the euro that has both economic and political implications (Cohen, 2000). Also, as some recent studies suggest (Artus, 2001), the internationalization of the euro—and thus its strengthening—assumes a substantial increase in the euro zone's potential for economic expansion. The latter essentially depends on the zone's demography and capital stock, which implies widening it to include young and undercapitalized countries.

transactions in goods and services—will represent a decisive vector (although insufficient in the long term) in its internationalization. In turn, the effects of the expansion of the euro bond markets on the capital markets of the issuing zone are not neutral. Together with other factors, the growth of the bond market will tend to increase the pressure to widen and deepen the euro financial market and make it more liquid. This should favor the development of better terms for payback period, refinancing, coverage and arbitrage conditions for both European and third-country participants.

Third, a major consequence of the growing financial use of the single European currency and the development of Euroland capital markets is that, in terms of official international reserves, this should lead to greater diversification in favor of the euro in the medium and long term. Amid the ongoing financial deregulation, the currency composition of international reserves seems to be strongly affected by the degree of development of the financial markets of the issuing zones of the main reference currencies. If this trend is not contradicted by the facts, greater diversification favoring the euro's use as an international reserve currency should tend to reinforce it unit-of-account function. In the short term, however, it is not likely that the eurocurrency will gain ground as a reserve asset; the central banks of the developing countries will to maintain a "wait and see" attitude (Galati and Tsatsaronis, 2001). This situation could change if, inter alia, the credibility of the European Central Bank were strengthened. This, in turn, is a decisive element in the internationalization of the euro.

Fourth, one of the most relevant aspects in the recent dynamics of European-Latin American financial relations, which have intensified greatly since the 1990s, is the expansion of European bank loans to Latin America. In the framework of the geographic diversification strategy implemented by the European banks, this expansion went hand in hand with a boom in European foreign direct investment. Bank financing activities could favor greater international use of the euro. Although most international loans have been extended in dollars up to now, the link between bank financing and FDI of European origin could result in greater use of the euro. In fact it is likely that there will be greater use of the euro as a relationship currency between parent companies and subsidiaries, as well as a greater proportion of credits in the eurocurrency, which could serve to reduce or eliminate exchange-rate risks for the companies and banks involved.

Fifth, the sustained increase in the share of euro-denominated international bond issues, chiefly by the Latin American public sector, is another of the distinctive features of the recent dynamics of European-Latin American relations. In turn, although euro issues by the Latin American private sector have increased substantially over the past two years, they are still at an incipient stage. These phenomena, which are part of the boom of the euro-denominated bond markets, have several relevant consequences. On one hand, they favor increased liquidity and depth of the euro-denominated emerging-bond market, even though—as we saw—this process is in its initial stages. On the other, the growing weight of euro-denominated external bonds makes it necessary to consider policies for managing the currency composition of the external debt.

Sixth, the study of the channels for generalizing the use of the different key currencies as anchor currencies shows that the likelihood of anchoring a national currency to the dollar decreases when the share of a country's external debt denominated in euros increases. If the Latin American countries continue to increase their borrowing in euros and this translates into a greater diversification of their international reserves, some of them might consider the possibility of using the eurocurrency in anchor baskets, especially in those cases where the euro zone is a major trading partner. Nevertheless, the dollar will continue to have a preponderant role in those baskets, given the entrenchment of the U.S. currency in Latin America. On the other hand, the medium- to long-term consequences on exchange arrangements will have to be included in the international scenario that is beginning to take shape since the creation of the euro. The previously mentioned factors

tending to enhance the possibility of adopting anchor baskets (at least in the case of some Latin American countries) would be further supported by the medium- to long-term scenario we regard as more likely: An increasingly bipolar but asymmetrical IMS presupposes high volatility between the two main international currencies. In this context, *de facto* and *de jure* anchoring focused exclusively on the dollar, which in theory offers substantial gains in terms of credibility, could turn out to be fatal for countries that maintain close trade and financial relations with the euro zone.

In short, the importance of the single European currency for Latin America will depend mainly on the speed at which financial links between Latin America and the euro zone intensify. A crucial point is the future growth of financing in euros by the private sector in Latin American countries. This financing is still modest in absolute terms and is mainly generated by bond issues. A continuing dynamism of foreign direct investment and bank loans from Europe to a Latin America could intensify the financial relations between the two regions and stimulate a greater use of the euro. The factors that would hinder this progression are the inertia that tends to strengthen the links with the dollar zone (balance sheets expressed in dollars and following U.S. accounting standards, access to financing in the U.S. stock market, etc.) and the possibility that the growth of the capital markets of the euro zone will be slower than currently expected. The intensification of financial relations between Europe and Latin America will obviously also depend on expectations concerning the financial costs and exchange-rate risks associated with the euro. In this framework, an issue that merits further study is the question of which borrowing currencies will be used in European bank loans to the Latin American private sector. Another point to examine is how the large European corporations operating in Latin America will react to the widening use of the euro.

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Annexes

Annexe I

Method of calculation of *de facto* arrangements and their results

The most frequently used method to identify a de facto arrangement consists in estimating an equation that explains the exchange-rate variations of each currency by means of the exchange-rate fluctuations of the major reference currencies (dollar, yen, mark, euro, etc.):

$$\dot{e}_{ikt} = a_0 + a_1 \dot{e}_{\$kt} + a_2 \dot{e}_{Ekt} + a_3 \dot{e}_{Ykt} + u_t$$

where, $\dot{e}_{ikt}$ = designates the exchange rate variation of currency i in relation to currency k between t and t—1. \$, E and Y designate the dollar, the euro and the yen, respectively.

The constant a_0 is positive if i is depreciated (or devalued) regularly to compensate for a positive inflation differential (case of real anchors or crawling pegs). Coefficients a_j are interpreted as the weight of each reference currency in the implicit basket of country i.

The cases that can arise are: $a_{ij} = 1$, which represents unit anchoring in relation to one currency (a single significant coefficient, equal to the unit); $0 < a_{ij} < 1$, which represents anchoring to a basket of currencies (at least two significant coefficients, where the sum is equal to the unit); $a_{ij} = 0$ for $\forall_j$, which represents a free float (no coefficient is different from zero).

As the direct estimate of the equation poses the problem of defining the numeraire *k* (a currency that fluctuates independently from the major explanatory currencies), Bénassy-Quéré and Coeuré use:

$$\alpha_i{}' X_{it} = \beta_i + u_{it}$$

where, $X_{it} = (\ \dot{e}_{i\$t}, \dot{e}_{iEt}, \dot{e}_{iYt}\ )$, α_i represents the weighting vector and β_i is a scalar.

The equation is estimated as a condition of orthogonality using the generalised-moment method, with the restriction:

$$\sum_{ji=1}^{3} \alpha_{ij} = 1$$

The estimate was made for 111 currencies, on the basis of weekly exchange rates and covering two periods: April 1995 to June 1997 (prior to the Asian crisis) and October 1998 to December 1999 (after the crisis). The euro was identified with the ecu prior to January 1999. Of the 111 countries used by Bénassy-Quéré and Cœuré, the following 93 were selected for this study.

EXCHANGE RATE ARRANGEMENTS: COUNTRIES INCLUDES IN THE SAMPLE

Argentina	Cote d'Ivoire	Honduras	Mexico	Slovakia
Bangladesh	Croatia	Hungary	Mongolia	South Korea
Barbados	Czech Republic	India	Morocco	Sri Lanka
Benin	Djibouti	Indonesia	Mozambique	Syria
Bolivia	Dominica	Iran	Nepal	Tanzania
Brazil	Dominican Rep.	Jamaica	Nicaragua	Thailand
Bulgaria	Ecuador	Jordan	Niger	The Gambia
Burkina Faso	Egypt	Kazakhstan	Nigeria	Togo
Burundi	El Salvador	Kenya	Pakistan	Trinidad and Tobago
Cambodia	Equatorial Guinea	Laos	Panama	Tunisia
Cameroon	Estonia	Latvia	Paraguay	Turkey
Central African Rep.	Ethiopia	Lebanon	Peru	Ukraine
Chad	Gabon	Lithuania	Philippines	Uruguay
Chile	Ghana	Madagascar	Poland	Venezuela
China	Grenada	Malawi	Romania	Vietnam
Colombia	Guatemala	Malaysia	Russian Federation	Zambia
Comoros	Guinea–Bissau	Mali	Senegal	Zimbabwe
Congo	Guyana	Mauritania	Seychelles	
Costa Rica	Haiti	Mauritius	Sierra Leone	

Annexe II

Principal component factor analysis (PCFA)

Principal component factor analysis makes it possible to represent numerous relations between variables in a small number of factors. The observations (or individuals) can be represented (projected) on a plane defined by the factor axes.

This quantitative method adjusts better to the analysis of a group of heterogeneous variables, i.e., expressed in units that are *a priori* different. Standardising each variable eliminates the arbitrariness resulting from the use of different measuring scales, which is expressed in a non-comparable dispersion. Thus, each variable has a variance that is equal to 1. For *J* variables, the total variance (that measures the overall dispersion of the individuals resulting from all variables) is equal to *J*.

Geometrically, the variables are represented by points situated on a sphere. The angle between two variables illustrates the correlation between them (Bravais-Pearson's linear correlation coefficient): this is the cosine of the angle. The correlation is more strongly positive when the angle is acute and more strongly negative when the angle is obtuse. The correlation is null when the two variables form a right angle.

The PCFA provides an orderly group of axes and corresponding eigenvalues. Eigenvalue n° α is the variance of the factor corresponding to axis α. The sum of the eigenvalues is always equal to the total variance. If the original variables all have a variance that is equal to 1 (by construction), the first factors will have a variance that is notably greater than 1: each of them embodies the disparity of observations attributable to a group of variables. As of a certain range, the factors associate with eigenvalues that are lower than 1. Thus, these last factors express less disparity between individuals than any of the original variables; this leads us to consider that the information they provide in terms of disparity between individuals is residual and, therefore, allows us to eliminate them from the result-interpretation process.

The factor coordinates of individuals (projections on the factor axes) can be used as new (compound) variables in econometric equations. These variables, that summarise the information contained in the original group of variables, present orthogonality as a fundamental characteristic, i.e. they eliminate all risk of multicollinearity.

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