

# Implications of the euro for Latin America's financial and banking systems

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## Abstract

This paper explores the impact of the euro on Latin America. We disregard both trade and changes in optimal debt strategies as important transmission channels. However, we present evidence suggesting that capital flows into and out of Latin America may be influenced by movements in European interest rates to a far greater extent than previously expected. We conclude with a discussion of the implication of the euro for the Latin American banking system. We argue that the euro will accelerate the internationalization of banking in Latin American creating potential solvency problems during the transition which should be addressed through a tightening of prudential regulation. © 2000 Elsevier Science B.V. All rights reserved.

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## 1. Introduction

Monetary union in Europe is widely acknowledged to be one of the most important economic events of the century, likely to have a broad influence over financial and banking systems of participants and neighboring countries as well as across the world. Not surprisingly, a rapidly growing literature examines the real

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and financial impact of a decline in intra-EMU transaction costs, the elimination of exchange rate risk across EMU members, and greater competition on European markets as a whole. Similarly, although to a lesser extent, the political and economic consequences of the launching of EMU for developed European outsiders, non-European industrial economies, and European transition economies with increasingly tighter links to countries in the euro zone, have already been the subject of a number of studies. However, to our knowledge, no systematic analysis has been conducted on the effect of EMU on regions with fewer apparent links with Euroland.<sup>1</sup>

This applies to Latin American (LAC) countries and the reasons for this are manifold. On the one hand, real and financial links between Latin America and Europe are not so obvious as in the case of Eastern European economies, where intra-European trade accounts for more than half of the total, where exchange rate regimes, as well as financial intermediation in general, are typically tied to the Deutsche mark, and where in many cases stabilization experiments have depended in a significant way on the promise of future EMU membership. Nor are Latin American countries comparable to neighboring Mediterranean countries with substantial commercial ties with Europe, or to CFA countries that belong to a monetary system based on the use of the French franc.

Although LAC themselves display substantial heterogeneity that limits the analysis of the effects of EMU on the region as a whole, in general they present similarities in various fronts. Whereas they remain relatively closed in real terms, LAC are for the most part fairly open financially and, partly as a result, highly vulnerable to changes in the direction of international capital flows. Accordingly, the discussion of the influence of EMU should necessarily center on the financial channel, as opposed to the ‘trade’ channel.

An analysis of the financial channel should discuss the impact on debt service flows arising from changes in the euro exchange rate level and volatility. On this front, the relevant questions point at optimal debt composition. However, it also has to contemplate the effect of more liquid European financial markets that will derive in lower financial transaction costs and risks, as well as in a lesser scope for diversification. Will the former dominate the net effect, with Euroland becoming an attractor of international flows at the expense of other markets, or will investors favor reasonably developed emerging markets as a source of risk diversification?

Finally, in the context of globalized financial markets and open Latin American economies, increased financial competition in the Euro zone is likely to accelerate the trend towards banking consolidation and concentration, the impact of which is already being reflected by the ongoing process of internationalization of financial intermediation in Latin America. Thus, the launch of EMU brings to the forefront a number of important questions. What should be the position of local authorities regarding foreign participation in the banking sector? Is full internationalization of the banking industry à la New Zealand a blueprint for small economies in a world

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<sup>1</sup>An exception is Cohen (1999).

of large financial institutions? If so, how should the transition be handled to avoid financial distress?

The roadmap of the paper follows closely the above discussion. After a brief assessment of the relative importance of the trade link, we proceed to examine more in detail the financial channels through which EMU may have an effect on LAC. Finally, we explore the possible spin-offs of banking competition in Europe, focusing on the benefits and pitfalls of foreign penetration in Latin America. The final section summarizes and provides tentative answers to the questions that motivate the paper.

## **2. Impact through the trade channel**

As was said in Section 1, the implications of the launch of the euro can be broadly classified as operating through a trade and a financial channel. Within the former, we can distinguish the effect of a reduction of transaction costs within EMU, and the impact of exchange rate variations on EMU's import demand for Latin American goods. More precisely, the introduction of a common currency, by eliminating the need for the use of a third vehicle currency (typically the dollar), may improve the competitiveness of EMU vis à vis foreign producers, inducing substitution from imported to locally produced goods. On the other side, exchange rate variations will likely be accompanied by variations of the same sign in the demand for exports from trade partners.<sup>2</sup> Although an estimate of the net impact of these factors is beyond the scope of this paper, in this section we shed some light on their likely order of magnitude.

In contrast with the case of small open transition economies in Eastern Europe or non-EMU industrial European countries, on which studies of the impact of EMU have concentrated, Latin American countries are characterized by a smaller degree of trade openness in general. It may be noted, however, that contrary to conventional wisdom, EMU members are almost as important trade partners for Latin American countries as is the US, particularly once we exclude Central American countries and Mexico, which have historically had strong links with the US. This point is illustrated by Table 1, which shows the share of total exports and imports from Latin American countries, including and excluding Mexico, with EMU and the US.

While the role of EMU in Latin American trade flows is not negligible relative to other trade partners, the trade effect is undermined by the fairly small degree of trade openness that characterizes Latin American countries. This point is illustrated in Table 2, which presents export and import data from EMU as percentage of GDP. For the countries selected, trade flows with EMU members amount to a minor share of GDP (below 4% in all cases), with average values of approximately

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<sup>2</sup>The real effective exchange rate effect depends, among other things, on the exchange rate elasticity of the volume of exports, the structure of LAC exports, and the geographical composition of exports.

Table 1  
Trade links with EMU and the US<sup>a</sup>

	1991 (%)	1992 (%)	1993 (%)	1994 (%)	1995 (%)	1996 (%)	1997 (%)
<i>Exports</i>							
Share US (without Mexico)	29	27	29	26	25	26	26
Share EU (without Mexico)	27	27	23	24	23	21	20
Share US (with Mexico)	44	44	46	45	45	48	49
Share EU (with Mexico)	21	21	17	18	17	15	14
<i>Imports</i>							
Share US (without Mexico)	31	32	32	29	28	29	29
Share EU (without Mexico)	23	22	21	23	22	23	20
Share US (with Mexico)	45	46	45	44	41	43	43
Share EU (with Mexico)	20	19	18	19	18	18	16

<sup>a</sup>Source: IMF, *Direction of Trade Statistics*, 1998.

Table 2  
Exports to EMU and Imports from EMU (as share of GDP)<sup>a</sup>

Country	1991 (%)	1992 (%)	1993 (%)	1994 (%)	1995 (%)	1996 (%)	1997 (%)
<i>X EMU / PBI</i>							
Argentina	2.0	1.5	1.3	1.3	1.4	1.3	1.0
Brazil	2.1	2.7	2.0	1.9	1.6	1.4	1.6
Chile	7.1	5.9	4.2	4.3	4.9	3.6	3.7
Colombia	3.9	3.6	2.9	3.4	2.6	2.3	N/A
Mexico	1.0	0.9	0.6	0.6	1.0	0.9	0.8
Peru	1.7	1.8	1.7	2.0	2.1	1.8	2.0
Average	3.0	2.7	2.1	2.2	2.3	1.9	1.8
Average <sup>b</sup>	3.4	3.1	2.4	2.6	2.5	2.1	N/A
<i>M EMU / PBI</i>							
Argentina	0.9	1.4	1.3	1.9	1.6	1.9	2.0
Brazil	1.2	1.1	1.3	1.4	1.7	1.5	1.7
Chile	3.4	3.7	4.0	3.8	3.7	3.9	3.8
Colombia	1.9	2.4	3.0	2.7	2.6	2.8	N/A
Mexico	1.7	1.8	1.7	1.9	2.1	2.0	2.1
Peru	0.9	1.1	1.1	1.5	1.9	2.1	2.4
Average	1.7	1.9	2.1	2.2	2.3	2.4	2.4
Average <sup>b</sup>	1.7	1.9	2.1	2.2	2.3	2.4	N/A

<sup>a</sup>Source: IMF, *Direction of Trade Statistics and International Financial Statistics*, 1998.

<sup>b</sup>Excluding Mexico.

1.8 and 2.4% for export and imports, respectively. As a result, any expected impact from a variation in the euro exchange rate is likely to be of minor consequences to the region.

Table 3

Estimated effect of a 1% change in EMU real GDP on EMU imports from selected Latin American countries (in millions of dollars)<sup>a</sup>

	Elastic. M-Y	Argentina	Brazil	Chile	Colombia	Mexico	Peru	Average
Germany	1.44	7.1	37.6	10.8	11.0	10.4	5.6	13.7
Austria	2.1	0.1	1.8	0.1	1.0	0.3	0.0	0.6
Benelux	2.1	6.5	31.1	5.7	5.2	7.8	3.9	10.0
Spain	2.1	13.2	22.2	7.2	3.5	19.7	3.3	11.5
Finland	2.1	0.6	2.2	2.3	2.4	0.1	0.2	1.3
France	2.21	6.8	25.4	10.1	6.3	9.5	2.0	10.0
Netherlands	2.1	18.4	84.0	8.9	5.6	5.5	4.5	21.1
Ireland	2.27	0.2	1.2	0.2	0.5	2.6	0.2	0.8
Italy	2.1	15.4	35.9	10.5	5.1	5.7	4.8	12.9
Portugal	2.1	1.1	8.6	0.2	0.9	2.0	0.3	2.2
Total effect		69.4	250.0	56.1	41.6	63.7	24.8	84.3
Total effect in % of 1997 exports		0.27	0.47	0.33	0.36	0.06	0.36	0.31
Total effect in % of 1997 GDP		0.021	0.031	0.073	0.048 <sup>b</sup>	0.002	0.038	0.036

<sup>a</sup>Source: IMF, *Direction of Trade Statistics and International Financial Statistics*, 1998 and Feldman and Temprano-Arroyo (1998).

<sup>b</sup>GDP for 1996.

The trade channel can also operate as a mechanism through which changes in economic activity levels in partner countries affect the demand for Latin American exports. Again, given the relatively small export to GDP ratios, we should not expect this effect to be particularly large. In Table 3 we illustrate this point by estimating the consequences of a 1% growth in GDP in each EMU member on their demand for Latin American goods. To do that, we use income elasticities of import demand derived from the IMF's multiregion macroeconomic model (MULTIMOD), as quoted in Feldman and Temprano-Arroyo (1998), and multiply them by 1997 EMU imports from Latin American countries. The results show that the effect, measured in terms of GDP, is generally small, with values ranging from 0.002% (Mexico) to 0.073% (Chile), and an average of 0.036%.<sup>3</sup>

In light of this evidence, we may a priori conclude that changes in the real effective exchange rate as a result of an appreciation of the euro, trade diversion induced by the decline in intra-EMU transaction costs, or shifts in import demand due to cyclical fluctuations in EMU's economic activity, are unlikely to have important consequences on Latin American economies.

<sup>3</sup>This contrasts with similar calculations for CEE countries which throw values that range between 0.2 and 0.5% of GDP (see Feldman and Temprano-Arroyo, 1998).

### 3. Impact through the financial channel

The movement towards financial liberalization in the region during the 1990s deepened the process of integration of local capital markets with major financial centers. The region has been on average a net recipient of international capital flows, hence highly sensitive to fluctuations in global market conditions. With a view on the determinants of these flows, for the purpose of our analysis we can distinguish between direct and portfolio investment. The former is likely to be affected by the real variables such as EMU-induced changes in economic growth and, for some sectors, increased competition that may lead firms to tap new markets. The latter will respond to the ECB's monetary policy and, the evolution of interest rates in the eurozone, as well as to the portfolio rebalancing resulting from a reduction in diversification margins in increasingly integrated European markets.

Lately, Latin American countries have been relatively successful in taking advantage of segmented international debt markets by borrowing in different European currencies, thus increasing their exposure to fluctuations in euro interest and exchange rates. EMU, by reducing market segmentation within EMU, will certainly narrow the scope for diversification of international borrowing. On the other hand, an integrated and more liquid euro market is likely to strengthen the demand for euro-denominated emerging market debt through lower transaction costs. Furthermore, as the euro positions itself as a major vehicle currency in international transactions, the optimal currency composition of international debt for Latin American countries may shift away from the dollar. The net effect, both on levels and volatility of financing costs faced by Latin American countries, is difficult to assess at this time. However, it deserves to be noted that the first, negative, aspect is likely to have an almost immediate impact, while the last two, positive, influences are associated with longer processes, contingent to the successful transition to an integrated financial market, and to a consistently sound monetary management that fosters an increasing protagonism of the euro in international transactions.

#### 3.1. *Impact on capital flows*

Whatever the final dynamics of the euro may be, any impact on capital flows to Latin American markets, will be necessarily related to the degree of financial integration of those markets, both with the euro region and with the rest of the world.<sup>4</sup>

Empirical studies of international financial integration in the literature have typically been based on interest rate parity conditions, Feldstein–Horioka type of

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<sup>4</sup>For example, a drop in European interest rates will not only lead to capital outflows from Europe to Latin America, but also to portfolio reallocations by investors in other financial centers (for example American institutional investors), with the final effect on Latin American markets a function of the costs associated with shifting funds to and from these countries. As was the case in the 1990s, these flows would in part finance trade deficits that eventually translate into stronger demand for European products.



The importance of Europe and, in particular, EMU members as a source of capital inflows to Latin America has been steadily increasing during recent years. Only scattered data are available on the origin of foreign direct investment (FDI) in the region. For example, Pereiro (1999), based on detailed information on declared investments by foreign-owned companies in Argentina, concludes that investment by European firms represented broadly 37% of the total during the period 1990–1997 (of which 13.7% corresponds to Spanish companies), while the US accounts for nearly 34%.<sup>7</sup> The relative importance of Spain confirms that direct investment depends, among other factors, on cultural comparative advantages, and strategic considerations related to potential network externalities in the region. Thus, Spanish companies have gained an important presence in the telecommunication and transportation industries, as a result of their active partici-

Table 5  
Where do bank lending flows to Latin America come from?<sup>a</sup>

Capital inflows	EMU				EU				Canada, US and Japan			
	1994 (%)	1995 (%)	1996 (%)	1997 (%)	1994 (%)	1995 (%)	1996 (%)	1997 (%)	1994 (%)	1995 (%)	1996 (%)	1997 (%)
Argentina	45	46	47	56	55	52	52	64	36	36	37	26
Bolivia	35	25	21	21	52	30	27	32	26	32	39	37
Brazil	36	37	39	42	47	46	45	48	36	36	37	31
Chile	38	37	47	51	45	43	51	54	43	44	37	33
Colombia	29	39	46	52	39	47	53	59	42	42	37	31
Mexico	28	32	34	37	44	43	42	45	44	44	42	40
Paraguay	45	39	35	56	54	46	38	56	5	14	15	6
Peru	44	47	50	62	52	53	54	67	25	17	20	22
Uruguay	45	53	51	58	54	60	58	64	35	31	32	24
Venezuela	40	44	43	41	52	56	55	51	40	36	34	34
Latin America	39	40	41	48	49	48	48	54	33	33	33	28
Simple average												
Latin America	37	39	41	46	49	48	48	53	39	38	37	32
Weighted Average												

<sup>a</sup> Bank lending flows measured as the change in claims of banks of lending country over total bank claims on financial institutions of recipient country. Source: *The Maturity, Sectorial and Nationality Distribution of International Bank Lending* (1998), BIS.

<sup>6</sup> Whereas short-run portfolio investment dominated the first wave of flows, peaking up in 1993–1994 before falling to more moderate levels after the Mexican crisis, direct investment became increasingly important once the stabilization and liberalization processes gained the needed credibility, displaying steady growth over the whole decade.

<sup>7</sup> These figures include both foreign acquisitions (flows) and invested earnings of foreign-owned firms already operating in the country, and exclude investment associated with the privatization of state-owned companies, in which the presence of European firms has been particularly strong.



pation in all major privatization processes in Latin America, as well as in the banking industry. While the consolidation of a common European market may have elicited a strong incentive for Spanish firms to position themselves as the channel of Europe–Latin American trade, the potential impact of EMU on European FDI in Latin America is less obvious.

Where EMU is likely to exert its strongest influence on portfolio flows. Although compiled information on the origin of total portfolio flows is not available, the point can be illustrated by data on international bank lending compiled by the BIS. Tables 5 and 6 summarize the composition of bank lending flows.<sup>8</sup> Whereas the

Table 6

What is the importance of Latin America in European bank lending flows?<sup>a</sup>

	Change in claims vis à vis Latin America/Developing countries				Change in claims vis à vis Latin America/Total countries			
	1994 (%)	1995 (%)	1996 (%)	1997 (%)	1994 (%)	1995 (%)	1996 (%)	1997 (%)
Austria	19	17	17	19	8	7	8	8
Belgium	17	15	14	14	11	10	10	9
Finland	14	11	10	17	6	6	7	10
France	29	27	26	27	23	21	20	21
Germany	43	36	34	33	21	19	18	19
Ireland	68	47	38	21	35	29	19	9
Italy	42	48	50	55	25	30	33	34
Luxembourg	14	18	15	17	2	3	3	4
Netherlands	56	53	51	49	45	41	38	35
Spain	72	72	81	88	52	46	58	71
EMU	39	36	37	39	24	22	23	26
Denmark	12	13	11	14	5	6	4	3
Norway	43	51	25	27	15	13	9	8
Sweden	40	35	34	43	21	22	24	30
UK	36	33	32	27	24	24	22	
EU	38	36	36	38	25	23	23	25
Canada	72	65	59	56	62	58	51	43
Japan	13	11	11	10	10	9	9	9
US	68	64	61	60	61	56	51	48
Canada + US + Japan	39	34	34	33	31	28	28	27

<sup>a</sup>Source: *The Maturity, Sectorial and Nationality Distribution of International Bank Lending* (1998), BIS.

<sup>8</sup>These flows are measured as the change in total claims of international banks on bank and non-bank financial institutions in the region.

share of bank flows originated in EMU jumped from 37% in 1994 to 46% in 1997, the share corresponding to banks in the US, Japan and Canada declined from 39 to 32%. On the other hand, flows to Latin America have represented an important but relatively stable share of total European bank outflows. On average, EMU banks have directed nearly one-fourth of their total foreign lending to Latin American markets, or 40% of their lending to developing countries, during 1994–1997.<sup>9</sup>

How can we reconcile the significant growth in EMU participation in Latin American bank inflows with the stable Latin American share of EMU bank outflows? As Table 7 indicates, net foreign lending flows of European banks in recent years have more than doubled those of Canada, the US and Japan combined. Thus, the growing significance of Europe as a source of foreign funds is not specific to Latin American but rather a general trend towards international portfolio diversification common to most European banks. Reasons underlying this trend could be found in the relatively low interest rates that accompanied the recent recessionary period in Europe, and the reduction in the scope for diversification within European markets as a result of the convergence in interest rates and the increasing correlation of intra-EMU returns.<sup>10</sup>

Assuming, as we do, that the same pattern is to be found in other types of portfolio investment flows, two important implications can be extracted from these findings. First, the vulnerability of Latin American economies, particularly those that in the past have received important volumes of portfolio investment, to interest rate developments in Europe should not be underestimated. Abstracting from transitory reversals fueled by crisis episodes, the continued availability of funds to finance Latin American current account deficits will be intimately linked, at least in the medium term, to the success of EMU in consolidating the ongoing fiscal reform process, thus enabling the new ECB to maintain interest rates at current low levels while keeping inflation pressures under control.

Table 7

Total net bank lending flows (in millions of US\$)<sup>a</sup>

	1995	1996	1997
EMU <sup>b</sup>	107 736	91 280	134 959
UE <sup>c</sup>	87 620	70 604	178 861
Canada + EEUU + Japan	58 078	54 485	24 434

<sup>a</sup> Source: *The Maturity, Sectorial and Nationality Distribution of International Bank Lending* (1998), BIS.

<sup>b</sup> Measured as the change of outstanding international claims of national banks.

<sup>c</sup> Includes EMU countries + Norway, Sweden and the UK.

<sup>9</sup> These numbers, however, mask deep differences in Latin American exposures of EMU partners. For 1997, the share is only 14% in the case of Belgium, it reaches 88% for Spain, and 55% for Italy.

<sup>10</sup> This point is discussed below.

Second, under the maintenance of current monetary conditions in EMU, one should expect that further financial integration should foster additional cross-border investments by European investors in search of higher yields and diversification opportunities. This expected outflow will benefit countries that constitute a viable investment opportunity, that is, those with moderate levels of risk and unrestricted financial sectors with the necessary development to facilitate financial transactions at a reasonable cost. These two implications are discussed in turn.

### *3.1.1. Interest rate sensitivity of short-run capital flows*

It has been long accepted that capital flows to Latin America are highly sensitive to fluctuations in foreign interest rates. Calvo et al. (1993), argue convincingly that short-term inflows to most Latin American countries in the 1990s displayed a common behavior intimately linked to the behavior of interest rates in the US. They find significant links between principal components extracted from a number of real and nominal indicators of activity in the US, and international reserves and real effective exchange rates in Latin America, which in turn should be positively correlated with capital inflows. This leads them to conclude that, since a large part of the capital account surpluses obeys to temporarily low interest rates abroad, a reversal of these flows is to be expected as soon as foreign interest rates pick up.<sup>11</sup>

Possibly because these tests tended to focus on US interest rates, which were implicitly associated with international interest rates as a whole, no study has been conducted on the sensitivity of Latin American capital flows to variations in interest rates from other regions. There are at least two reasons to explore this particular link at this time. First, as the process of European integration strengthened, European interest rates tend to move increasingly closer to each other. Thus, savings in EMU countries and, in turn, capital flows from and to the euro zone will likely display stronger co-movement and sensitivity to changes in EMU-wide interest rates. The fact that the European and US cycles did not coincide in recent years facilitates the analysis of the differential effect of European rates. Second, as emphasized in the previous section, EMU countries have supplied an increasingly important portion of foreign investment flows to the region, possibly replacing the US as the main source of international capital. Therefore, one would expect to see an important sensitivity of Latin American capital flows to European interest rates in the latest years.

We test the previous intuition by regressing international reserves (RES) and the real effective exchange rate (RER) for selected Latin American countries (Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela) on US (ius) and

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<sup>11</sup>Although the intuition was largely confirmed by the process leading up to the 1994 Mexican crisis, recent crisis episodes in Asia, in a context of flat or declining interest rates, run against this argument.

<sup>12</sup>The model is similar to a VAR, with the following conditions on the simultaneous links between variables: (i) foreign interest rates are exogenous; and (ii) reserves do not depend contemporaneously on the real effective exchange rate.

DM 3-month T-bill rates (iger), according to the following equations:<sup>12</sup>

$$\begin{aligned} \text{RES}_t = & c_1 + a_{11}\text{ius}_t + a_{12}\text{ius}_{t-1} + a_{13}\text{ius}_{t-2} + a_{14}\text{ius}_{t-3} + b_{11}\text{iger}_t + b_{12}\text{iger}_{t-1} \\ & + b_{13}\text{iger}_{t-2} + b_{14}\text{iger}_{t-3} + d_{12}\text{RES}_{t-1} + d_{13}\text{RES}_{t-2} + d_{14}\text{RES}_{t-3} \\ & + g_{12}\text{RER}_{t-1} + g_{13}\text{RER}_{t-2} + g_{14}\text{RER}_{t-3} + e_t \end{aligned}$$

$$\begin{aligned} \text{RER}_t = & c_2 + a_{21}\text{ius}_t + a_{22}\text{ius}_{t-1} + a_{23}\text{ius}_{t-2} + a_{24}\text{ius}_{t-3} + b_{21}\text{iger}_t + b_{22}\text{iger}_{t-1} \\ & + b_{23}\text{iger}_{t-2} + b_{24}\text{iger}_{t-3} + d_{21}\text{RES}_t + d_{22}\text{RES}_{t-1} + d_{23}\text{RES}_{t-2} \\ & + g_{24}\text{RER}_{t-3} + g_{22}\text{RER}_{t-1} + g_{23}\text{RER}_{t-2} + g_{24}\text{RER}_{t-3} + e_t \end{aligned}$$

Table 8 reports the sum of the four US\$ and DM interest rates coefficients in each equation, and the probability values of a  $\chi^2$  statistics corresponding to the hypothesis that all four coefficients are equal to zero.

The figures indicate that, while the US rate is in most cases significant and was the main influence in the evolution of reserves in the early 1990s, the DM rate becomes the main explanatory factor in the recent period. In particular, with the exception of Colombia, the DM interest rate has *P*-values below 10%, and their coefficients display the correct sign. Moreover, they are associated with lower probability values than the US rate. The only exception is Mexico that, as expected, continues to display a strong negative link with the cycle in the US.

The bottom line from this preliminary exploration is that the future evolution of capital flows to Latin America may reflect the evolution of the euro interest rate more closely than is usually believed. In particular, while the current recessionary environment in core EMU countries may stimulate a shift of funds from EMU to Latin American markets, Latin American authorities should bear in mind that a future rebound could cause a sudden drop or even a reversal in the direction of these flows. Furthermore, by effectively unifying EMU interest rates, the launch of the euro can only amplify this effect measured by our simple models. Hence, through this channel, Latin American prospects may be significantly linked to the European business cycle.

### 3.1.2. Diversification effects

Partly as a result of the growing credibility in the compliance with the schedule leading up to EMU, and partly due to the coordination of monetary and fiscal policies required by this process, recent years witnessed a rapid convergence in interest rates across European markets towards the Deutsche mark interest rate. Beside its implications on the link between the European cycle and Latin American capital flows, studied above, increased convergence of returns may have potential effects on the destination of international flows as European markets offer ever narrower margins for diversification.

In Table 9 we compare simple correlation coefficients for interest rates of selected EMU members (France, Germany, Italy, and Spain) and the UK, computed from monthly data for the periods 1990–1993, and 1994–1998. From the

Table 8

US\$ and DM interest rates and reserves and real exchange rates

Country	Period 1988:1–1993:12		Period 1994:1–1998:10	
	$\Sigma_i a_{1i} = 0$	$\Sigma_i b_{1i} = 0$	$\Sigma_i a_{2i} = 0$	$\Sigma_i b_{2i} = 0$
<i>US\$ and DM interest rates and reserves</i>				
Argentina	–0.091 (0.000)	0.005 (0.269)	–0.012 (0.783)	–0.128 (0.013)
Brazil	–0.049 (0.002)	–0.015 (0.050)	0.004 (0.867)	–0.081 (0.024)
Chile	–0.007 (0.407)	0.017 (0.010)	–0.022 (0.024)	–0.014 (0.001)
Colombia	–0.048 (0.001)	0.024 (0.002)	0.001 (0.907)	0.006 (0.759)
Mexico	–0.077 (0.006)	0.001 (0.001)	–0.116 (0.011)	–0.045 (0.346)
Peru	–0.039 (0.084)	0.005 (0.646)	–0.042 (0.000)	–0.073 (0.000)
Venezuela	–0.018 (0.280)	0.001 (0.174)	0.026 (0.478)	–0.032 (0.076)
<i>US\$ and DM interest rates and real exchange rates</i>				
Argentina	0.013 (0.036)	0.028 (0.000)	–0.001 (0.031)	0.010 (0.031)
Brazil	0.006 (0.003)	–0.003 (0.487)	0.032 (0.005)	0.007 (0.067)
Chile	–0.003 (0.099)	0.002 (0.282)	–0.025 (0.001)	–0.006 (0.173)
Colombia	–0.005 (0.202)	–0.005 (0.386)	0.003 (0.652)	–0.014 (0.115)
Mexico	–0.002 (0.356)	0.001 (0.547)	–0.016 (0.008)	0.008 (0.874)
Peru	0.031 (0.248)	0.028 (0.322)	–0.011 (0.157)	0.006 (0.342)
Venezuela	0.016 (0.203)	–0.017 (0.001)	0.044 (0.000)	0.045 (0.019)

Lag length: 3 months. Source: *International Financial Statistics*.

table, the reader can see how, for all but one case (Italy and Germany), the convergence process reflected in a raise of correlation coefficients from a level that was already relatively high, with the average correlation jumping from 0.675 to 0.778%. By contrast, the average correlation of the UK interest rate with the rest dropped from 0.54% in the first period to –0.42% in 1994–1998, mirroring the divergence in macro policies relative to EMU candidates that characterized the country in the latest years.

The same pattern can be found in stock market returns. Tables 10 and 11 summarize the correlation matrix of stock market returns for selected countries, during the periods January 1992–December 1994 and January 1995–February

Table 9  
Interest rate — correlation matrix<sup>a</sup>

	Germany	France	Italy	Spain	UK
<i>1990–1993</i>					
Germany	1				
France	0.682734	1			
Italy	0.675466	0.742155	1		
Spain	0.615186	0.757063	0.578947	1	
UK	0.66956	0.490964	0.265809	0.734442	1
Average	0.6212326				
Average <sup>b</sup>	0.6752585				
<i>1994–1998</i>					
Germany	1				
France	0.793515	1			
Italy	0.567643	0.83485	1		
Spain	0.633782	0.859579	0.979747	1	
UK	–0.4594	–0.31899	–0.45119	–0.45616	1
Average	0.2983376				
Average <sup>b</sup>	0.778186				

<sup>a</sup>Source: IMF, *International Financial Statistics*.

<sup>b</sup>Average without UK in the sample.

1999. EMU countries are represented by the previous four countries as well as the Netherlands, Belgium, and Portugal, while non-EMU countries include the UK and Sweden. The Latin American group (LAC) comprises Argentina, Brazil, Chile, and Mexico. In addition, we included Turkey, a privileged candidate to capture European funds in search for higher yields at a moderate risk and, for the sake of comparison, the US, Canada and Japan.<sup>13</sup>

In general, all correlations (both between countries and across regions) are larger in the latest period, a well-known phenomenon that has been attributed to increased financial integration and higher overall volatility of international financial markets.<sup>14</sup> More important, market correlations within EMU increased by more than between EMU and other regions. The same is true for the Latin American countries in the sample where the average correlation increased sharply over the two periods, from 12 to 61%, significantly more than correlations with any other region. Thus, whatever the underlying factors behind this finding, it is apparent that the convergence of returns displays an important regional pattern.

<sup>13</sup>The numbers reported for a region are simple averages of correlations with each country in the region. Thus, the average correlation of EMU countries with each other is the average of 21 pair-wise correlations. All computations are based on daily data on dollar returns.

<sup>14</sup>On the argument that emphasizes the positive link between volatility and correlation, see Forbes and Rigobon (1998, 1999).

Table 10  
Correlation of stock market dollar returns for selected Latin American countries<sup>a</sup>

	US + Canada	Japan	EMU	EU (non-EMU)	LAC
<i>(I) 1992–1995</i>					
BRA	0.01	0.03	0.02	–0.01	0.09
ARG	0.14	–0.03	0.05	0.05	0.14
MEX	0.17	0.02	0.09	0.13	0.14
CHI	0.19	–0.05	0.10	0.10	0.12
LAC	0.13	–0.01	0.06	0.07	0.12
<i>(II) 1995–1999</i>					
BRA	0.38	0.05	0.16	0.21	0.65
ARG	0.46	0.06	0.16	0.21	0.65
MEX	0.40	0.08	0.16	0.19	0.59
CHI	0.34	0.06	0.23	0.28	0.55
LAC	0.40	0.06	0.18	0.22	0.61
<i>(III) Differences II – I</i>					
BRA	0.38	0.01	0.13	0.21	0.56
ARG	0.32	0.09	0.11	0.15	0.50
MEX	0.23	0.05	0.08	0.06	0.45
CHI	0.16	0.11	0.13	0.18	0.43
LAC	0.27	0.07	0.11	0.15	0.49

<sup>a</sup>EMU: Germany, Spain, Italy, France, Netherlands, Belgium and Portugal. EU non-EMU: England and Sweden. Periods: 7/2/1992–2/1/1995–5/2/1999. Source: Bloomberg.

In turn, the ever decreasing diversification opportunities offered by EMU markets, combined with the regional nature of the co-movement of returns in general, may fuel a portfolio rebalancing from EMU investors according to simple diversification strategies across regions that ignore individual countries' idiosyncrasies. The fact that EMU markets are only weakly correlated with Latin American ones suggests that the latter may be the recipients of part of these funds released by European stockholders in search for greater diversification opportunities.<sup>15</sup>

### 3.2. Debt policy

#### 3.2.1. Optimal composition of the external debt

An appreciation of the exchange rate worsens the terms of trade and drives down net trade receipts while reducing the burden of the debt in terms of GDP.

<sup>15</sup>As mentioned above, however, the direction of these flows will also be determined by the country's location and rating, since the investment decisions of many institutional investors are restricted in their choice of regions and asset class. Thus, a country like Turkey, with OECD membership and returns that are relatively uncorrelated with those in euroland, is likely to be favored over Latin American contenders.

Table 11  
Correlation of stock market dollar returns for selected EMU countries<sup>a</sup>

	LAC	US + Canada	Japan	EU (non- IEMU)	Turkey	EMU
<i>(I) 1992–1995</i>						
GER	0.06	0.05	0.27	0.43	–0.12	0.43
ESP	0.10	0.17	0.13	0.36	–0.07	0.35
ITA	0.03	0.03	0.12	0.26	–0.03	0.26
FRA	0.10	0.19	0.18	0.49	–0.06	0.39
NED	0.07	0.25	0.11	0.32	–0.08	0.19
BEL	0.03	0.00	0.21	0.33	–0.01	0.33
POR	0.05	–0.09	0.43	0.28	0.37	0.29
EMU	0.06	0.10	0.14	0.31	–0.05	0.32
<i>(II) 1995–1999</i>						
GER	0.16	0.24	0.34	0.62	0.19	0.61
ESP	0.29	0.33	0.24	0.61	0.17	0.56
ITA	0.13	0.17	0.25	0.47	0.18	0.49
FRA	0.22	0.33	0.28	0.65	0.17	0.57
NED	0.22	0.29	0.16	0.48	0.11	0.39
BEL	0.09	0.18	0.35	0.50	0.14	0.53
POR	0.14	0.23	0.60	0.47	0.57	0.52
EMU	0.16	0.22	0.23	0.48	0.14	0.52
<i>(III) Differences (II – I)</i>						
GER	0.10	0.19	0.07	0.19	0.30	0.18
ESP	0.19	0.15	0.11	0.24	0.24	0.21
ITA	0.10	0.14	0.13	0.21	0.21	0.23
FRA	0.12	0.14	0.11	0.17	0.23	0.19
NED	0.15	0.05	0.05	0.16	0.20	0.20
BEL	0.06	0.18	0.14	0.18	0.15	0.20
POR	0.09	0.32	0.17	0.19	0.20	0.23
EMU	0.10	0.12	0.09	0.16	0.19	0.20

<sup>a</sup>Source: Bloomberg.

The optimal composition of external debt should take into account both sides of the equation, and try to hedge against exchange rate variations. If interest rate parity holds, the debt portfolio should mirror the composition of trade flows, so that any change in inflation or exchange rates in a partner country is perfectly offset by a proportional change in the interest rate of the partner's currency. In practice, however, there are several reasons why the optimal debt composition may be different, including temporary interest rate misalignments and substitution between tradables and non-tradables driven by variations in the exchange rate. In addition, trade balances are determined to a large extent by real shocks, both domestic and foreign, that bear no relation with developments in nominal variables.

Moreover, the use of the currency composition of external debt as a hedging instrument is limited by the fact that governments cannot rebalance their portfolios



of (largely long-term) liabilities with the necessary frequency. Thus, any successful hedging strategy requires stable relationships between trade balances and financial costs, so that stable optimal currency shares can be derived.<sup>16</sup>

Existing studies of the use of the currency composition of government financial assets and liabilities generally rely on one or both of two factors. On the one hand, transactions cost considerations associated with the objective of monetary authorities of minimizing the costs of their foreign exchange intervention, induces them to hold a relatively high share of reserves in the currency of intervention, so that they can intervene by simply rebalancing their net position in the currency. On the other hand, hedging considerations would suggest that authorities should try to minimize the volatility of the country's trade balances net of interest payments, in which case the currency composition should reflect the relative correlations between trade earnings and the effective financing costs in each currency.<sup>17</sup>

Thus, studies of the optimal currency mix of international reserve typically focus on: (a) an optimal hedging strategy, typically defined as the minimum variance portfolio of an investor that plans to use international reserves for consumption of import goods, including, in some cases, a speculative portfolio, under the assumption that the monetary authority will actively seek to profit from arbitrage opportunities; or (b) a strategy that minimizes intervention costs, which would explain, e.g. why economies with a unilateral peg would hold larger amounts of reserves denominated in the peg currency. Studies that tackle the problem of the optimal currency composition of external debt typically estimate it so as to minimize variations in export receipts net of debt payments.<sup>18</sup> We follow this methodology and explore optimal debt composition based on hedging considerations, by estimating the minimum variance distribution of long-term external debt for four Latin American countries: Argentina, Brazil, Chile and Mexico, among three reference currencies: the US dollar, the Deutsche mark, and the yen.<sup>19</sup> We use the traditional CAPM approach, under the assumption that the composition of foreign borrowing obeys to the objective of reducing fluctuations in the local currency variation of export earnings.<sup>20</sup> More precisely, we estimate the following equation:

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<sup>16</sup>The natural alternative of a continuous rebalancing a portfolio of short-run maturities entails a larger exposure to each individual instrument, involving high-risk premiums and transaction costs may offset any gain in terms of coverage.

<sup>17</sup>For example, countries that peg their currency are found to hold a larger share of reserves denominated in the anchor currency. Similarly, at the time of the EMS, in which members agreed to use the US dollar as intervention currency, the dollar share of reserve holdings in EMS countries increased well beyond what could be explained through a mean-variance utility maximization approach (see Dooley et al., 1989, and references therein). However, it is still true that various estimates based on CAPM seem to provide a good approximation in some cases (see, e.g. Dellas and Yoo, 1991).

<sup>18</sup>A CAPM approach should consider both sides of the balance sheet simultaneously, as the hedging problem of the government consists in principle in minimizing the volatility of net trade receipts (i.e. exports minus imports) net of interest payments (i.e. debt service cost minus interest earned by international reserves). However, the lack of country data on the composition (and, sometimes, even the amount) of international reserves have so far prevented a more comprehensive test.

<sup>19</sup>As is shown below, most of Latin American debt is denominated in these currencies.

$$\ln(P^* \cdot Q)_{t+1} - \ln(P^* \cdot Q)_t = \sum_i \beta_i \left\{ \ln \left[ (1 + r_{i,t}) \cdot \left( \frac{e_{i,t+1}}{e_{i,t}} \right) \right] - \ln \left[ (1 + r_{i,t-1}) \cdot \left( \frac{e_{i,t}}{e_{i,t-1}} \right) \right] \right\} + u_t$$

Table 12  
Optimal currency composition

	Argentina	Brazil	Chile	Mexico
<i>1992:1–1998:6</i>				
Total borrowing (% X)	910	3	144	71
US\$ (%)	103	1742	147	162
DM (%)	0	–164	2	0
Yen (%)	–3	–1478	–49	–62
R <sup>2</sup> (adj.)	0.100	0.009	0.076	0.185
Risk reduction (in sample, %)	11	1	8	23
<i>1992:1–1994:12</i>				
Total borrowing (% X)	838	6	216	66
US\$ (%)	106	896	189	193
DM (%)	8	447	2	9
Yen (%)	–14	–1243	–91	–101
R <sup>2</sup> (adj.)	0.377	0.020	0.277	0.069
Risk reduction (in sample, %)	60	2	38	7
<i>1995:1–1998:6</i>				
Total borrowing (% X)	–387	285	66	74
US\$ (%)	101	118	121	150
DM (%)	3	–3	–3	–2
Yen (%)	–5	–14	–18	–48
R <sup>2</sup> (adj.)	0.013	0.102	0.009	0.291
Risk reduction (%)	1	11	1	41
Risk reduction (%) Rolling portfolio (in-sample, %)	21	7	17	23
1992:1–1994:12 (out-of-sample, %)	22	–93	7	6
1995:1–1998:6 (out-of-sample, %)	–34	–5	–29	37

<sup>20</sup> For a simple derivation of the model (see Claessens, 1992).

where  $P^*$  is the unit price of exports in local currency,  $Q$  is the volume of exports,  $r_i$  is the foreign borrowing cost in currency  $i$  (proxied by the 6-month LIBOR in each currency), and  $e_i$  the exchange rate (local over foreign currency units). We estimate the model using data for the period 1992:1–1998:6, and again for the sub-periods 1992:1–1994:12 and 1995:1–1998:6, to test the stability of the composition. Finally, we estimate the risk reduction associated with each portfolio by comparing the volatility of the fitted residuals computed as:

$$\hat{u}_t = \ln(P^* \cdot Q)_{r+1} - \ln(P^* \cdot Q)_t - \sum_i \hat{\beta}_i \left\{ \ln \left[ (1 + r_{i,t}) \cdot \left( \frac{e_{i,t+1}}{e_{i,t}} \right) \right] \right. \\ \left. - \ln \left[ (1 + r_{i,t-1}) \cdot \left( \frac{e_{i,t}}{e_{i,t-1}} \right) \right] \right\}$$

with that of the export earnings  $P^*Q$ , using the estimated shares for the whole period and the two subperiods (in-sample tests), and using the estimated shares for period I to forecast period II values and vice versa (out-of-sample test). The results are reported in Table 12.

A first look at the results for the whole period suggests that, with the exception of Brazil, there appear to be some, albeit minor, margin to reduce export earnings volatility through the use of the optimal currency mix (risk reductions vary from 8 to 23% of unhedged volatility; for Brazil the reduction is only 1%). A comparison of the results for the two sub-periods seems to confirm this finding although, as expected, they also signal that the optimal currency composition is far from being stable. However, a look at the signs shows certain pattern over the whole period. To varying degrees, the four countries should have borrowed in dollars and invested in yen, with the mark playing a relatively minor role. Optimal debt portfolios provide a sizable reduction in volatility for Argentina and Chile during 1992–1994 and for Mexico in 1994–1998. Again, gains are limited in Brazil, mainly reflecting the poor fit of the regressions that throw very low levels of total borrowing (e.g. 3% for the whole period and 6% for period I). Interestingly, as the model for Brazil improves its fit in period II, both optimal total borrowing and risk reduction increase significantly (285 and 11%, respectively).

However, the model is predicated under the assumption that long-term debt is used to hedge short-term fluctuations in export earnings, which requires the currency composition to be stable over time. Conversely, the instability that is apparent from a comparison of currency shares across periods I and II is reflected in the fact that for all but a few cases, out of sample test yield very poor results. For example, had Argentina chosen to follow the optimal composition computed from period I data during period II, it would have increased the volatility of export earnings net of debt payments (a risk reduction of –34%). On the contrary, Mexico, the country for which both total borrowings and currency shares display the greatest stability, would have benefited from applying the hedging rule from one period to pick the composition of the other period's debt. The pattern that arises from this exercise is consistent with the current dollar concentration of

external debt, but the gains in terms of earning smoothing appear to be quite limited.<sup>21</sup>

It follows from the previous argument that any impact of a change in the volatility of interest rates within EMU is likely to be, if anything, relatively minor in terms of changes in the optimal currency composition of external debt for hedging purposes, as the little hedging margin that arises in times of macroeconomic instability can be largely instrumented through a combination of dollar and yen liabilities.<sup>22</sup> Thus, any change in Latin American debt strategy (assuming that similar conclusions could be drawn from other countries in the region) resulting from EMU should give priority to other considerations such as increased liquidity of the EMU bond market, or a rebalancing of European funds towards emerging market assets that may lower emerging market spreads.

## **4. Banking sector**

### *4.1. The euro and European banks*

Even before EMU, the globalization of financial markets, aided by a gradual process of deregulation, have been fueling a rapid rationalization of European banking systems, with increased competition from within the region and the threat from ever bigger US financial powerhouses forcing European intermediaries to consolidate and extend operations to other, previously untapped, markets.

The euro is expected to accelerate this trend. Prati and Schinasi (1997) note that, after the elimination of foreign exchange risk for intra-EMU transactions, there will be few remaining entry barriers, and only a few institutions with the necessary capital and geographical reach will be able to compete with a handful of large players with international operations at the wholesale level. In addition, the euro, by eliminating the ‘anchoring principle’ by which many European central banks require that domestic institutions lead-manage bond issues, will facilitate cross-border competition for the provision of this service. Similarly, the removal of the matching rule of foreign currency exposures of insurance companies and pension funds will create a pool of funds for which investment banks in EMU will compete on an equal basis. This new competition will stimulate further consolidation through cross-border mergers and acquisitions.<sup>23</sup>

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<sup>21</sup>An obvious hedging alternative to the currency composition of external debt is the use of instruments linked to the price of commodities that represent important shares of many Latin American countries’ exports. Unfortunately, these type of instruments are relatively developed for short-term maturities only, and thus are subject to the same caveats as the use of short-term debt contracts in general.

<sup>22</sup>The fact that an important part of the existing debt carries fixed interest payments is another mitigating factor.

<sup>23</sup>The elimination of profits from foreign exchange operations as a result of the launch of a single currency will also impact negatively on wholesale banking, adding an additional incentive to consolidation and rationalization of the wholesale banking sector.

At the retail level, the euro may have an even greater impact. Surprisingly, the recent process of deregulation in Europe, although reflected in a decline in net interest margins and bank profits, did not lead to cost reductions or diversification towards other financial services.<sup>24</sup> As a result, it is widely acknowledged that there are too many, relatively inefficient, retail banks in Europe. The euro may help initiate a process of rationalization by eliminating the home currency advantage and homogenizing the regulatory framework. Also, an increased demand of EMU-wide services may open retail banking to competition from large global banks. However, rigidities in labor markets, public ownership structures and differences in taxation, regulations, and accounting and business practices may delay the necessary rationalization of European retail banking. As a consequence, depressed profits are likely to generate banking sector fragilities, and possibly a more aggressive attitude towards risk.

#### *4.2. Impact on Latin American banking sectors*

The steady process of deregulation of the banking sector in Europe has led to a more competitive environment that was reflected in narrower intermediation margins and lower profits, without a clear impact on productivity.<sup>25</sup> This is likely to have at least two effects. On the one hand, it will put pressure on European banks to extend their operations on more profitable emerging markets. This stimulus will certainly combine with the gradual relaxation on foreign participation in domestic banks in some Latin American countries that is already leading to the rapid internationalization of the banking sector in those countries. The share of bank assets intermediated through foreign-owned banks has been increasing rapidly, reaching in 1998 nearly 46% of domestic bank assets in Argentina, 23% in Brazil and 31% in Colombia.<sup>26</sup> Furthermore, this measure of internationalization (and the associated impact on domestic institutions) is even larger if we consider that state-owned banks, usually largely isolated from external competition, represent an important share of the banking sector.<sup>27</sup> For example, in the case of Argentina, the share of assets held by foreign-owned banks is broadly 68% of total assets of private banks, a measure that becomes a more relevant proxy of the future ownership structure of the Argentinean banking sector once we take into account that most state-owned banks are likely to be privatized eventually. Indeed, it is at least conceivable that, as barriers to foreign entry are removed from Latin

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<sup>24</sup>On this, see Prati and Schinasi (1997) and OECD (1996).

<sup>25</sup>See Prati and Schinasi (1998).

<sup>26</sup>See IMF (1998) and La Nación (1998).

<sup>27</sup>At least two reasons underlie the smaller sensitivity of state banks' performance to foreign penetration. On the one hand, state banks typically are assumed to enjoy preferential treatment from the lender of last resort in the event of liquidity shortages due to political considerations. On the other, their areas of activity, usually related to directed credit at subsidized rates and the provision of government services, do not overlap with those of foreign banks, which concentrate in large-scale projects (manufacturing and utilities).

American countries, the banking industry in the region will evolve towards full internationalization à la New Zealand.

The launch of EMU is expected to foster this process further, in turn placing strong pressures on local intermediaries ill-prepared to compete with large international financial institutions. This type of competition, while in the long run may induce the rationalization of Latin American banking sectors, as well as a welcome improvement in productivity, is bound to make the sector more vulnerable in the short run. The desired rationalization entails not only the implementation of coordinated mergers and acquisitions, but also the possibility of bank failures. Furthermore, the decline in profits, by detracting from the value of individual institutions, tilts the balance between the pursuit of prudent investment policies and more risky strategies with higher expected returns towards the latter.<sup>28</sup>

A second front on which the globalization of financial services and, in particular, a renewed interest of European banks to invest in emerging economies can affect the soundness of Latin American banking sectors arises from the growth in international bank lending. An increase in the elasticity of the supply of funds, although beneficial in the long run, in the recipient countries reduces the oligopolistic rents of domestic banks, possibly creating incentives for excessive risk-taking that can give place to a higher probability of insolvency in the short run.<sup>29</sup> Competition, however, is expected to bring about cost economies and greater efficiency in the long run. Therefore, the final balance in terms of welfare for the economy as a whole will greatly depend on the way financial opening in general, and internationalization in particular, are implemented.

At any rate, the extent to which competition, both from foreign entrants and cross-border lenders, may adversely affect the health of domestic institutions is related to the initial strength of domestic banks. Thus, while an aggressive entry strategy of foreign banks on the US market during the 1980s did not seem to have resulted in disruptive competition and financial fragilities,<sup>30</sup> the rapid internationalization of more fragile Latin American banking sectors may introduce some source of distress in the banking sector if not accompanied by the strengthening of banking supervision as well as a coordinated effort to enable foreign penetration through mergers and acquisitions rather than through direct competition between foreign- and domestically-owned institutions.

#### 4.3. *The pros and cons of internationalization*

However, we have not yet fully answered the question of whether international-

<sup>28</sup> See Cordella and Levy Yeyati (1998) and Schargrotsky and Sturzenegger (1999).

<sup>29</sup> Along these lines, low margins in major financial centers may have contributed to the rapid growth of interbank lending to Asian countries prior to the 1997 crisis (see Levy Yeyati, 1998).

<sup>30</sup> Deyoung and Nolle (1996) find that foreign banks' profitability was below domestic banks'. This may be due to the fact that, as a result of an aggressive strategy aimed at gaining market share, they financed their rapid growth with expensive purchased funds. The share of loans held by foreign banks was approximately 50% of the total as of beginning of the 1990s, or nearly double the share they had 10 years before.

ization is likely to have, in net term, a positive or negative impact on Latin American economies and whether it should be actively encouraged by monetary authorities. In this regard, it is useful to note the differences between the effects of financial globalization in Latin America as compared with other regions.

Unlike the case of big financial centers like the US or EMU, deregulation in Latin America does not appear to have brought about the consolidation of local powerhouses but rather the acquisition of local banks by bigger institutions from those centers. This may be due, at least in part, to the fragmentary and uneven nature of the process in the region, which hampered a coordinated effort from banks with local comparative advantages. However, the main underlying reason seems to be that, faced with an increasingly competitive environment, these incumbent advantages seem to be offset by a higher perceived vulnerability to financial shocks, including from limited capitalization and insufficient liquidity protection from local central banks. Thus, other things equal, it is to be expected that depositors shift their funds from local banks to subsidiaries of foreign institutions, (implicitly) insured by highly diversified parent houses and solid lenders of last resort in parent countries.

This phenomenon has been apparent in every episode of financial stress in the region. The redistribution of funds as a result of a flight to quality in those instances was reflected in a larger concentration of deposits in foreign-owned banks. In countries with open banking sectors (such as Argentina), pressure on local banks fueled their sale or merger with foreign banks (the only ones with sufficient funds to restore undercapitalized banks to reasonable levels), making the concentration process irreversible, while vaccinating the banking industry against future financial shocks.

On the contrary, banks in financially stressed countries with restrictions to foreign participation have to rely on central bank assistance to provide the necessary capital that lubricates the process of internal consolidation, leaving behind weakened banking sectors and, in the long run, an important fiscal burden to be shared by all taxpayers. This argument seems to justify an ordered transition to an internationalized banking industry.<sup>31</sup>

Empirical evidence on these issues is, at least, fragmentary. Claessens et al. (1997) analyze bank-level data covering 80 countries during 1988–1995, and find that while in developed countries the presence of foreign banks are typically associated with lower net interest margins — defined as net interest income divided by total assets — lower overhead costs and lower profitability than domestic banks, the opposite appears to be true for developing ones. One possible reason for this behavior is that recent entrants (i.e. assuming that banking sectors

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<sup>31</sup> However, as in any process of economic opening, there are obvious political obstacles to the opening of the banking sectors. For example, local shareholders tend to complain that an accelerated opening in times of financial turmoil forces them to fire-sell their stakes in local institutions, or that the comparative disadvantage vis à vis foreign banks is rooted in limited lender of last resort assistance offered by central banks that, in many cases, appear to be favoring a rapid rationalization. These types of concerns have been voiced recently by local bank associations in Brazil and Argentina.

in developing countries have been open only recently) have to incur an additional cost to make up for incumbent advantages and gain a reasonable market share, which would suggest that, at least in the short run, cost efficiencies are not likely to be visible. Alternatively, if foreign banks are competing in quality instead of price, quality-adjusted productivity may still be higher for foreign banks. However, the authors also show that overhead costs and profitability for domestic banks are negatively correlated with the degree of foreign penetration measured as the number of foreign banks over the total.<sup>32</sup> This would indicate that at least part of the competitive pressure may translate in an improvement in cost efficiency in the market as a whole.

Cull et al. (1998) test the impact of foreign penetration in the Argentine financial sector by comparing the performance of domestic banks in relation with their exposure to sectors where foreign banks are particularly active. Thus, they find that banks with a focus on manufacturing, a domain where foreign banks have been particularly active, have seen their profitability reduced by more than those domestic banks that concentrate in, say, personal loans. In light of this evidence, and along the same lines as Claessens et al. (1997), they argue that foreign competition has indeed exerted a negative impact on domestic bank profitability. However, their results show a negative link between profitability and overhead costs, which they attribute to higher costs of finding good lending opportunities in an increasingly competitive environment, in contrast with the result in the previous paper.<sup>33</sup> This illustrates the difficulties involved in identifying a productivity effect when measures of bank services cannot be adjusted for factors such as difference in quality or transient relative to permanent effects.<sup>34</sup>

Regarding the link between financial vulnerability and foreign penetration, Demirgüç-Kunt et al. (1998) find that, other things equal, the presence of foreign banks is associated with lower probability of financial crisis. One can think of at least two reasons behind this finding. First, foreign banks may benefit from more efficient financial practices, as a result of their higher exposure to competition.<sup>35</sup> Conversely, highly protected banking sectors would tend to generate inefficient institutions, as well as vested interest that may negatively affect the efficacy of their regulation and supervision, rendering the whole sector highly vulnerable to adverse shocks. Second, foreign-owned banks may weather liquidity shocks more easily thanks to the aid provided by highly capitalized parents, and the credibility borrowed from strong central banks that act as lenders of last resort in the parent

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<sup>32</sup> The effect on net interest margins is not significant. Moreover, the results are weaker if foreign competition is measured as the share of total assets in the hands of foreign banks.

<sup>33</sup> However, from the study it is not entirely clear whether this decline in profitability is directly associated with foreign competition, the result of increased competition in a particular sector in general, or the cause behind a shift in the focus of operation of most banks.

<sup>34</sup> For example, an increase in overhead costs may be related to organizational changes aimed at improving efficiency, or may be also linked to a surge in (economically inefficient) marketing costs.

<sup>35</sup> There is not much empirical evidence in support of economies of scale in banking services, a strong candidate explanation.



country. In turn, a country with a substantial degree of internationalization may be partially isolated from financial shock.<sup>36</sup>

While the literature emphasizes the first argument to support the conventional view that international competition reduces inefficiency and vulnerability, the second argument underscores the growing difficulty of small open economies to supervise sophisticated financial markets and ultimately to come up with the funds required to insure the system against increasingly bigger exposures. In this regard, the internationalization of banking services has been saluted as providing additional benefits associated with an automatic transfer of the functions of supervision and lender of last resort to the monetary authority of the parent country. This view is clearly illustrated by the experience of New Zealand, a country that ceased to conduct on site inspections and abolished deposit insurance, at the time it started to publish detailed financial information on all operating banks. Although the regime is predicated on the disciplining effect of depositor monitoring public disclosure of financial information, it is largely agreed that a third, usually underestimated, leg of the current scheme is provided by the level of bank internationalization.<sup>37</sup>

Whereas, as it follows from the discussion, there is certainly something to be gained from internationalizing the banking sector in terms of ‘borrowing’ bank supervision, such a strategy does not come without costs. First, excessive reliance on external (foreign) supervision may backfire if, as pointed out by Kane (1998), supervisors tend to be more lenient with the quality of investment practices of foreign subsidiaries of domestic institutions than they are with domestic banking operations.

Second, there is a limit to the extent to which a country can get rid of its supervisory responsibilities simply by hiring foreign institutions to provide financial services. More precisely, can a country like Argentina solve its lender-of-last-resort limitations by selling all domestic banks? Although the answer to this question is largely speculative, since there has not been a case in which an internationalized banking sector has been put to such a test, it certainly depends on the size of shocks against which we intend to isolate the system. Thus, while a foreign affiliate facing financial difficulties is expected to be backed up by its parent in normal times, foreign banks are likely to be much more reluctant to intervene to preserve its foreign operations in the event of a crisis of regional consequences, the more so if such a crisis threatens to become global and affect its operations in the parent country.<sup>38,39</sup>

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<sup>36</sup>This may have been one of the reasons underlying the resilience shown by the Argentinean banking sector during the wave of financial crises that started with the devaluation of the Thai baht.

<sup>37</sup>In New Zealand, nearly 100% of bank assets are in the hands of foreign banks.

<sup>38</sup>A third negative aspect of the internationalization of banking services is related with the traditional approach to international banking that stresses that foreign banks tend to follow their clients abroad. Evidence on the existence of a significant relationship between the pattern of bank location, trade and foreign direct investment, is reported, e.g. in Brealey and Kaplanis (1996) for an international database, and Grosse and Goldberg (1991), for foreign banks in the US. This would in turn suggest that foreign banks may favor foreign companies over local ones, another manifestation of cherry picking that may have undesired consequences.

Finally, the internationalization of the domestic banking sectors is no different from the sale of any other productive structure, and entails the same allocative efficiency considerations. Thus, from a real perspective, there does not seem to be many reasons in favor of the maintenance of a domestically-owned banking sector, as Latin American countries do not appear to be better prepared than other financial centers to develop competitive financial intermediaries. One aspect that may introduce a potential difference is whether foreign banks engage in ‘cherry picking’, choosing one sector or a narrow segment of customers and leaving part of the economy underfinanced. But this is likely to characterize only their short-run behavior, as informational asymmetries will be gradually resolved. Indeed, cherry picking is associated with bank concentration in general, and therefore should not be held against internationalization, if the alternative consists of further consolidation of domestically owned institutions. Moreover, the probability that foreign banks ‘cherry pick’ domestic business is likely to be higher if financial opening involves only cross-border lending, where informational asymmetries tend to be larger and incentives to reduce them smaller. At any rate, the evidence on cherry picking is mixed.<sup>40</sup>

## 5. Conclusions

In discussing the impact of the euro on Latin America we started by illustrating why the emphasis should be placed on the financial impact of EMU rather than on its real, trade-related, aspects. We argued that this conclusion is driven by the closedness of Latin American economies, rather than by the relative importance of real ties with European countries which, for many countries, appear to be of around the same order as those with the US

Likewise, we showed that the optimal currency composition of external debt from a hedging perspective is unlikely to be affected by the euro, due to the apparently low margin to diversify export earnings volatility by means of long-term debt instruments, in particular with those denominated in euros.

Where the impact of the launch of EMU is likely to be felt more strongly is in the behavior of capital flows to the region. The increasing convergence of European returns, both in interest rates and stock markets, by limiting the scope for diversification within Europe, may induce a persistent shift of European and international investors that seek further diversification opportunities towards emerging markets that present a reasonable level of development, a shift that may

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<sup>39</sup>This aspect mirrors the limitations of a policy of buying private insurance from a consortium of banks, as was done in Argentina. While this is feasible, albeit to a limited extent, for a single small economy, the availability of private insurance may run out quickly as exposure to regional risk mounts once other countries in the same region follow.

<sup>40</sup>Nicholls (1998) reports that, in the case of New Zealand, foreign bank activity has been increasingly diversified, as banks develop specific knowledge about the local environment. For Argentina, foreign-owned banks are already active in personal or mortgage lending (Cull et al., 1998).

be already behind the surge in European banking flows. In this regard, Latin American markets present the advantage of being less closely correlated (and, we may add, relatively more developed) than those of neighboring transition economies.

This process is already under way. Our analysis of capital flows between Europe and Latin America, and in particular of the sensitivity of these flows to variations in European rates, indicated that the region is likely to be highly vulnerable to changes in EMU's monetary stance. We showed that funds from the region have become an increasingly important component of total capital inflows to Latin America which, combined with the fact that from now on they will be governed by a single interest rate, implies that the impact of sharp fluctuations in EMU's monetary policy on the financing costs faced by Latin American economies is bound to be sizable.

Finally, we argued that increased banking competition in EMU may accelerate the ongoing process of internationalization of banking sectors in Latin America. Indeed, the success of EMU makes all the more apparent the irreversible trend towards the global consolidation of financial services, as witnessed the current process of mergers and acquisitions in the main financial centers. Therefore, rather than asking whether internationalization will ultimately come, we chose to concentrate directly in the benefits and pitfalls of such a process.

Our discussion suggested that foreign penetration can be considered as the natural outcome of the opening of formerly protected sectors to more efficient institutions that benefit from the comparative advantage offered by financial centers, as well as the response of increasingly vulnerable domestic banking systems that cannot compete equally with better capitalized and more widely diversified institutions backed by more reliable lender-of-last-resort facilities in parent countries. In addition, economies of scale in supervision technologies motivate the willingness of monetary authorities in many small open economies to import supervision services by transferring the responsibility to the parent countries. Finally, risk pooling considerations make it relatively less costly for central banks in these economies to provide emergency assistance to internationally diversified financial institutions.

However, the cost of this strategy should not be underestimated. First, it is not obvious the extent to which the parent institution (or, for that matter, monetary authorities in the parent country) would be willing to incur the costs of effectively insuring their foreign operations. There is certainly a limit beyond which the financial costs of bailing out foreign affiliates exceed the reputation cost of letting them fail.

More important, however, are the short-run costs of financial opening in a context of weak domestic banks and inefficient supervision. As in any other industry, foreign competition, by negatively affecting overall bank profitability, may amplify existing fragilities. In addition, bank competition may create incentives to engage in excessive risk taking as a way of 'gambling for resurrection'. Therefore, inasmuch as the opening of banking sectors in the region appears to be an unavoidable consequence of the removal of capital account restrictions, it is crucial that it be accompanied by the necessary prudential safeguards, possibly including

an active intervention of the supervisory authority to prevent disruptive competition during the transition.

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## References

- Brealey, R.A., Kaplanis, E.C., 1996. The determination of foreign banking location. *J. Int. Money Finance* 15 (4), 577–597.
- Calvo, G., Leiderman, L., Reinhart, C., 1993. Capital inflows and real exchange rate appreciation in Latin America. *IMF Staff Papers* 40 (1), 108–151.
- Claessens, S.A., 1992. The optimal currency composition of external debt: theory and applications to Mexico and Brazil. *World Bank Econ. Rev.* 6 (3), 503–528.
- Claessens, S., Demirgüç-Kunt, A., Huizinga, H., 1997. How Does Foreign Entry Affect the Domestic Banking Market? Mimeo, The World Bank.
- Cohen, B., 1999. EMU and the Developing Countries. Mimeo, UCSB, October.
- Cordella, T., Levy Yeyati, E., 1998. Financial Opening, Deposit Insurance and Risk in a Model of Banking Competition. CEPR Working Paper 1939, Center for Economic Policy Research.
- Cull, R., D'Amato, L., Molinari, A., 1998. The Effect of Foreign Entry on Argentina's Domestic Banking Sector. Mimeo, The World Bank.
- Dellas, H., Yoo, Ch., 1991. Reserve currency preferences of central banks. *J. Int. Money Finance* 10, 406–419.
- Demirgüç-Kunt, A., Levine, R., Min, H.C., 1998. Opening to Foreign Banks: Issues of Stability, Efficiency, and Growth. Mimeo, The World Bank.
- Deyoung, R., Nolle, D., 1996. Foreign-owned banks in the United States: earning market share or buying it. *J. Money, Credit Banking* 28 (4).
- Dooley, M., Lizondo, S., Mathieson, D., 1989. The currency composition of foreign exchange reserves. *IMF Staff Papers* 36 (2), 385–434.
- Feldman, R., Temprano-Arroyo, H., 1998. Trade and financial effects of EMU on selected transition and Mediterranean countries. In: *Impact of EMU on Selected Non-European Countries*. International Monetary Fund.
- Forbes, K., Rigobon, R., 1998. Measuring Contagion, Only Interdependence: Measuring Stock Market Comovements. NBER Working Paper # 7267, September.
- Forbes, K., Rigobon, R., 1999. Measuring Contagion: Conceptual and Empirical Issues, Mimeo Sloan School of Business, MIT.
- Grosse, R., Goldberg, L.G., 1991. Foreign bank activity in the United States: an analysis by country of origin. *J. Banking Finance* 15 (6), 1092–1112.
- IMF, 1998. Argentina: Recent Economic Developments. *IMF Staff Country Report No. 98/38*, International Monetary Fund.
- Kane, E., 1998. Capital Movements, Asset Values, and Banking Policy in Globalized Markets. NBER Working Paper 6633, National Bureau of Economic Research.

- La Nación, 1998. La Extranjerización del Sistema Financiero Preocupa al Brasil. La Nación, July 10, Buenos Aires.
- Levy Yeyati, E., 1998. Global Moral Hazard, Capital Account Liberalization and the 'Overlending Syndrome'. Mimeo, International Monetary Fund.
- Montiel, P., 1993. Capital Mobility in Developing Countries. Some Measurement Issues and Empirical Estimates. Policy Research Working Paper WPS 1103, The World Bank.
- Nicholls, P., 1998. New Zealand's Experience with Foreign Ownership in its Financial System. IMF Working Paper, International Monetary Fund.
- OECD, 1996. Bank Profitability: Financial Statements of Banks. Organization for Economic Cooperation and Development.
- Pereiro, L., 1999. Patterns of Foreign Direct Investment in Emerging Economies: Recent Evidence from Argentina. Mimeo, School of Business Economics, Universidad Torcuato di Tella.
- Prati, A., Schinasi, G., 1997. EMU and international capital markets: structural implications and risks. In: Masson, P., Krueger, Th., Turtleboom, B. (Eds.), EMU and the International Monetary System. 17–48, International Monetary Fund.
- Schargrodsky, E., Sturzenegger, F., 1999. Banking Regulation and Competition with Product Differentiation. Mimeo, Universidad Torcuato Di Tella.
- The World Bank, 1997. Private Capital Flows to Developing Countries: The Road to Financial Integration. The World Bank and Oxford Economic Press.