

Chapter 1

Editorial Introduction to the Volume and Detailed Introductions to Each of its Four Parts

1.1. Introduction to the Volume

Much is happening in the real-world laboratories of monetary union, and this volume provides an effort to evaluate the results to date and to consider alternatives. With European Monetary Union and its currency now an accepted reality, and with a growing list of countries formally dollarizing, interest in the subject of currency consolidation has ceased to be just academic. Even for countries that attempt to float independently with or without credible inflation targets it is getting ever harder to keep the dominant international currency denominations, U.S. dollar and euro, out of their economies, money supply, and all manner of contracts and balance sheets. Countries as diverse as Argentina and Poland, or even Ukraine, are struggling with the question of whether it is best to maintain or to dispense with a troublesome national currency that is giving them limited, costly, and erratic service as compared with the formal adoption of U.S. dollars or euros in business and finance. Smaller entities or countries, like Bosnia, Ecuador, El Salvador, Kosovo and Montenegro, unable to maintain or introduce a credible independent national currency, have settled for unilateral dollarization or euroization already.

The choice of currency and exchange rate system by individual countries can affect the entire international financial system, and as such, has far-reaching consequences. Two basic objectives of international financial arrangements are:

- To prevent financial crises, or in case they happen, to limit the damage; and
- To promote efficient financial intermediation and international capital flows.

This volume shows that currency consolidation, by shrinking the number of risky currencies and exchange rates in a region, may contribute importantly to both objectives, but that the form of monetary union affects the risks and benefits significantly too. In particular, political and economic equivocations such as hard-pegs for national currencies may not prove hard enough to remain credible when the weather turns foul, as it did in Argentina after 1998.

Financial Crisis Prevention through Currency Consolidation

In emerging-market countries, financial collapse often involves the joint occurrence of banking, debt, and currency crises. The resulting economic problems tend to be severe. Bordo *et al.* (2001: 55-61), show, for instance, that in their sample of developed and developing countries, one or more of these crises occurred on average per country once every *eight* years in the 1973-1997 period. In the case of joint banking and currency crises, it took almost four years on average before a country's rate of growth returned to its pre-crisis trend level. The cumulative loss of output amounted to 18.6 percent a year over the four years, more than twice the loss from recessions brought on by currency crises unattended by banking crises. Consequently, recent initiatives to

strengthen the international financial architecture have aimed mainly to reduce the frequency, duration and severity of joint banking and currency crises.

Currency consolidation can contribute significantly to that effort. In the aftermath of the 1997 Southeast Asian crisis, the international community shifted its support away from fixed but adjustable exchange rates toward the polar extremes of freely floating exchange rates on one side and hard fixes, like currency boards and currency unions, on the other. Since then it has become clear that freely floating exchange rates are a risk that countries with minor currencies rarely care to take. These countries have learned to regard any sharp exchange-rate movement as a threat to the stability of their financial, economic, and political systems. A report by an Emerging Markets Eminent Persons Group (EMEPG) aptly summarizes and explains the attitudes of developing countries:

Recent empirical studies suggest that exchange rates in emerging markets that do not have formal pegs have limited flexibility in practice because the central bank does not allow the exchange rate to float due to its own domestic inflation target and the constant speculative tendency towards overshooting. The monetary authorities appear in practice to tolerate a high volatility of reserves and interest rates in order to reduce the volatility of their exchange rates. Large economies whose external trade represents a relatively low proportion of activity, and where the domestic financial markets are sufficiently deep, can tolerate a floating exchange rate; most

emerging markets – highly exposed to foreign trade with shallow capital

markets – cannot do so. (EMEPEG, 2001: 24-25)

Argentina's experience in 2001-2002 has also taught that currency boards may not be hard enough exchange-rate fixes unless they are seen to lead quickly to formal dollarization or monetary union. Even before the hard peg's soft underbelly was fully exposed in Argentina, a BIS Working Paper openly questioned whether a currency-board law is a commitment device at all, contrary to typical claims:

Occasional amendments to the relevant laws are not uncommon among modern currency board economies. In fact, there is often nothing substantial to rule out the possibility of changes, be they minor or major ... Moreover, laws typically only outline how the currency board is to be organized and how it is to operate; the legal consequences of not playing by the rules are usually not explicitly stated anywhere. What legal action, if any at all, the public can take against the sovereign government in the event of a violation is also unclear. Thus the commitment effect of the law may not be so obvious after all. (Ho, 2002: 20)

Since the extreme of free floating is not acceptable to emerging-market economies and currency board arrangements may not be sufficiently ironclad, some countries have pondered the merits of currency union, or the alternative of shedding their national currency entirely in favor of a foreign-issued currency or a new joint creation. Yet national and international official bodies continue to downplay the contribution that

currency consolidation can make to mitigating international financial crises. Thus, officials tout the sovereign prerogative of national money as a tool to be kept in reserve for providing emergency financing relief through inflation. There is even significant support for separate currencies as a way to maintain national regulatory barriers and to leave open the door to capital controls and other restrictions in case the discipline of international financial markets should be unduly harsh or capricious. Indeed, private preferences for different currency denominations and the choices made in markets in this regard are not to be decisive in the government's currency and exchange arrangements. The following position on the choice of appropriate exchange rate regime appears representative of educated opinion in developing countries:

The choice of exchange rate regime in order to avoid misalignment should be left to the government. This choice should not be constrained by international financial institutions to the 'corner' options of a permanently fixed parity or a free-float. An 'intermediate' exchange rate regime may well be preferable in practice for countries trading worldwide and subject to external financial shocks. This intermediate exchange rate regime may need to be supported by market-based intervention instruments or other appropriate regulations in order to contain speculative attacks.

(EMEPG, 2001: 26)

Several contributions in this volume take issue with this position. Intermediate regimes have been prone to financial crises in the past, and several authors point to

regional monetary union as a means of strengthening the architecture of the international financial system. Because of currency substitution in emerging-market economies, flexible exchange rates pose a great risk. Exposure to banking, debt, as well as currency crises might be reduced in emerging markets if countries entered into regional monetary and economic unions with others who already possessed a widely held international currency. Furthermore, as the studies in Part II show, monetary union itself deepens economic union while assuring internal exchange-rate stability. The claim, further supported below, is that monetary union would mitigate exposure to each of the three types of financial crises.

- *Banking Crises.* With monetary union, problems of currency mismatch between assets and liabilities diminish for banks in emerging-market countries. Reduced vulnerability of the banking sector to currency crises helps to make such crises less likely. In addition, central bank action, initiatives taken by member governments as a group, and market pressures coming from an efficient part of finance within the union can improve the efficiency and soundness of local banking. Thereby frequency, duration, and severity of banking crises may all be reduced.
- *Debt Crises.* Even though monetary union may facilitate borrowing in private markets, it largely decouples unionwide monetary policy from the national fiscal policy of members, and thereby precludes monetization of individual budget deficits. Thus, on the whole, monetary union hardens the government budget constraint. Of course, sovereign debt crises still

can happen. Monetary union provides no assurance that a profligate government will not become so heavily indebted as to encounter a funding crisis that leaves it unable to borrow or to roll over external debt. But if a small enough country joins a large enough monetary union there will be little risk that the country's difficulties in financing its public debt will rock the exchange rate of the entire monetary union. Furthermore, a downgrade of any country's government debt inside a monetary union need not depress the creditworthiness of borrowers under that government's jurisdiction because they may have independent access to borrowing in the common currency. Any resulting crises thus will be contained. Accordingly, there will be a lesser need for international financial rescue packages organized by the IMF, bankruptcy courts, and international actions binding creditors. The principle of subsidiarity -- letting issues be dealt with at the level at which they arise -- will be more widely applicable when problems arising from a country's fiscal misbehavior and overborrowing are largely confined to its own jurisdiction.

- *Currency Crises.* Use of a common currency in a large and economically integrated region tends to attenuate the impact of shocks, such as money-demand or portfolio-composition shocks, arising in any of its parts. "The larger the currency area, the greater is the resistance of the exchange rate to any given economic disturbance" (Mundell, 1973: 150). In addition,

after regional monetary union, member countries are less sensitive to exchange-rate shocks to the extent intra-union business accounts for a large part of their international trade and finance.

Unilateral Versus Multilateral Monetary Union

Having stressed the significance of monetary union for crisis prevention, there remains the question of the relative merits of different types of monetary union. As detailed in Part I of this volume, two basic types exist: multilateral monetary union of the sort pioneered in Europe, and unilateral currency union, such as formal dollarization. It is a central fact that different countries do not face the same opportunities to adopt the two forms. Several Central and Eastern European countries reasonably can contemplate euroization or no euroization prior to entry into European Monetary Union (EMU), or euroization without subsequent entry. All three choices are meaningful. However, no country anywhere on the globe can reasonably contemplate multilateral monetary union with the United States – not for the foreseeable future. The United States is not open to the suggestion. Witness Chairman Greenspan’s famous “three no’s”: No seignorage sharing, no inclusion in the U.S. regulatory and supervisory network except for consolidated home-country supervision of U.S. multilateral financial institutions, and no seat at the (FOMC) council where U.S. monetary policy is determined. Of course, the U.S. attitude could evolve as financial integration progresses in the Americas, and multilateral features, including seignorage sharing, eventually could be grafted onto a

currency union with the United States. But, independently, the differences between multilateral and unilateral monetary union bear careful examination.

Accordingly, Parts III and IV focus on the politics and the public choices surrounding both forms of monetary union, and the tensions that may arise for lack of a monetary union (of either form) in an economic union. These Parts also focus on dollarization and euroization in specific countries. In particular, Part III contains several distinguished studies of the origin and propagation of the 2000-2003 Argentinean crisis and the lessons it holds for other countries seeking to avoid similar jeopardy. Part IV deals mainly with the infrastructure of the EMU and the division of responsibilities within the European Union between agencies of the Eurosystem (the European System of Central Banks) and member governments.

There is no question that multilateral monetary union is much more integrative than mere currency union. If we judge from the experience of EMU, multilateral monetary union follows regional economic union. The multilateral form of union takes years of advance preparation, rests on international treaties, and gives rise to multilateral decision-making extending far beyond monetary policy. Deep institutional, regulatory and legal transformations are a prerequisite for EMU, and these transformations imply substantial integration of capital markets, payment systems, inter-bank networks, and financial instruments and services. As a result, the benefits of multilateral monetary union go much further than those of the unilateral form. These benefits include the following:

- An integrated financial system that provides all members with about the same level of interest rates for given credit risk. This level can be low if the monetary

union harbors a country with a currency that was internationally prominent before unification. Indeed, the most direct contribution of a monetary union to productive investment and economic growth lies in the integration of capital markets and the resulting reduction in the level and prospective variability of capital costs toward the level that had prevailed beforehand in the financially most advanced country of the region. Through multilateral monetary union, differentially greater currency risk is eliminated for the other member countries.

- A level playing field for all financial institutions in the monetary union in providing monetary services. To all evidence, competitive neutrality does not obtain when a country makes a unilateral decision to adopt a foreign currency such as the U.S. dollar. U.S.-based financial institutions have a formidable advantage in providing dollar-denominated financial services. Thus they tend to take over much of the financial business in countries that choose to dollarize. By contrast, a Belgian bank is not at a particular disadvantage relative to a German or French bank in the provision of euro-denominated banking services.
- Sharing of central bank profits from currency issue and central-bank intermediation according to a formula which rests on mutually agreed principles of equity. In the case of the Eurosystem, the distribution key is based on member countries' population and GDP. Therefore it provides for a continuing flow of seignorage to all members, regardless of prior euroization. However, countries that have euroized partially or completely prior to acceding to EMU indeed have suffered a one-time loss of seignorage that is not made up (without special

provisions) when they join since there will be less national currency to trade in for euro. Even so, future entrants into the EMU will get a much better deal than countries that decide to dollarize.

- Countries being much more likely to enter a multilateral than a unilateral monetary union at an exchange rate that lies in the vicinity of equilibrium. Under multilateral union, there are arguments for and against overvaluation that are, at least, fairly evenly balanced. On the one hand, multilateral union makes overvaluation of the expiring national currency politically attractive by enabling an entering country to get a large stock of the common money in return for retiring its national currency at the start. On the other hand, overvaluation is discouraged by its adverse effects on economic growth and employment. In addition, the required maintenance of a stable exchange rate for two years prior to entry provides some assurance that the terms of irrevocable fixing are not disruptive. Under unilateral monetary union, political incentives are not similarly balanced. Rather, undervaluation may be encouraged by several factors. By choosing a low initial conversion rate, the unilateral entrant can preserve its international reserves, keep down the value of domestic-currency debt upon conversion to dollars, and become more competitive at the start. But trading partners may be injured and extra inflation may well ensue in the country that formally dollarizes at an undervalued rate.

Three other advantages to candidates for entry into EMU should be cited.

- *Sense of Direction.* The accession countries will obtain a clear road map and reform agenda to follow because of the well-defined procedures for entry into EMU. Evidently, countries that choose to dollarize unilaterally will need to draw up their own map, sometimes in an atmosphere of crisis and against strong internal opposition. In countries that have formally dollarized in recent years, such as Ecuador, the initial phase of the process was far more traumatic than it was, for instance, for Greece to join EMU.
- *Credibility and Permanence.* Since formal dollarization is adopted unilaterally and without international treaty, it can be undone more readily than multilateral monetary union. Reversal is essentially a domestic matter. Consequently, the credibility of dollarization is smaller and the elimination of currency risk less complete. Any threat to undo dollarization and to resurrect a national currency or to introduce a multilateral issue, if taken to heart by international capital markets, could destabilize the U.S. dollar once formal dollarization has spread over a wide enough area.
- *Joint Objective Function.* The management of a multilateral monetary union serves the welfare of the entire membership while the management of a unilateral monetary union serves the welfare of the currency issuer. This issuer is likely to pursue its national political and economic objectives and may be able to exert various forms of “currency coercion” (see Kirshner, 1995) which membership in multilateral monetary unions would preclude. In such a union, cooperative management by all the members promotes joint welfare maximization.

Concluding Comments

There are many factors driving toward monetary union in the world today, and the research presented in this volume has much to say about their causes and consequences. The forces of currency consolidation now are far ahead of the political forces needed to bring them into appropriate institutional form. The pressures that lead to monetary union stem partly from market opportunities arising from the revolution in information and communications technology and from the development of global supply and marketing networks that impinge on financial markets. These pressures derive as well from recurring financial crises. They cannot be disassociated from the fact that there are about two hundred different national currencies changing hands on the world monetary scene.

The political classes and central banks in most countries have been reluctant to admit the forces of currency consolidation, much less yield to them. The international financial institutions too are still in the habit of proffering advice to countries about national monetary and exchange rate policies on the assumption that getting rid of both is not even an option. As Rodrik (2003) has argued, there are valid political and economic tradeoffs between countries tying their hands, so as to deny themselves the opportunity to deal by certain independent monetary means with crises, and lowering the probability and occasion for such crises by that very same act. The overall thrust of this volume is that monetary union deserves a much higher priority in the search for reforms of the international monetary system.

1.2 Introduction to Part I: Overview of Monetary-Union Issues and Controversies

Decades ago, McKinnon (1973) identified four issues bearing on the desirability of displacing the U.S. dollar-based monetary system, which he saw dominating Europe. He thus considered whether a European currency could form the second leg of a dual system of lead currencies in the world. This question poses issues of the international distribution of seignorage, broadly interpreted to include all kinds of monopoly and control rents arising in the financial system, and of national ownership of a country's industry and financial system, and monetary and fiscal policy. The demise of the Bretton Woods system of exchange rates pegged to the dollar reduced the dependence of other advanced countries on U.S. policy in some respects. Yet the issues listed by McKinnon remain of central importance for any assessment of U.S. dollar dominance. The broader welfare question is whether key national fiat monies should be recognized or even promoted as natural regional or global monopolies in open capital markets and at what level system competition, and hence currency competition, remains viable and desirable.

McKinnon's (1973: 88) four points, here slightly abridged, were these:

1. The seignorage losses associated with using dollars as money. With a competitive banking structure as in the Eurodollar market, one can show that these are probably very small while the advantages of having a single international currency are very great.
2. The implications for the ownership and control of European industry of having at least some of the European savings-investment process channeled through dollar-based financial institutions.

3. The advantage to Europeans of having greater independence in monetary and fiscal policies. Since much economic instability in the post-war period has arisen out of unfortunate governmental policies, it is not clear how much this independence is worth.
4. The instability of monetary policy within the United States. In the absence of full political integration, should the rest of the world be completely dependent on what the American Federal Reserve does? One might feel somewhat safer if there existed at least one other major competitive currency.

Laissez-faire dollarization (see Schuler, 2002) could mean that the government gets out of the business of determining what money people use in its jurisdiction and how, with whom, and where they choose to conduct their financial and banking business. The only proviso would be that financial institutions provide accurate accounting information so that they can be disciplined by “the market”. Given that the smooth functioning of financial intermediation is critical to the success of national economies, most governments like to keep a firm hand on the monetary and financial process. Hence they may regret the atrophy in local expertise that U.S. dollarization may well imply for the supervision of banking and financial systems, as Angeloni has noted in Part I. There may be other adverse long-term consequences. If dollarization is counseled in view of a region’s poor policy record and without regard to its potential for reform and financial development, as McKinnon (1973) came close to doing for Europe in point 3, accepting such advice may foreclose opportunities for system innovations from within.

With dollarization, U.S. financial institutions, because of their funding advantage and assured access to the Federal Reserve and to other U.S. government agencies and the U.S. Congress, gain decisive, perhaps exclusive, operational and policy influence throughout the dollarized world. This creates significant exposure of the smaller countries to their (e.g., disclosure and credit) practices and to any extraterritorial applications of U.S. government mandates imposed on U.S. financial institutions abroad or on dealing with them. Who bears the costs of bailouts or bankruptcy of any such institution operating in foreign countries and which oversight agency is charged with guarding against insolvency and managing its consequences are among the unresolved questions that arise when one country unilaterally relies on another country's fiat money and banking conglomerates and thereby exposes itself to external political impositions.

Considering the question of a common money circulating over a wide region in earlier centuries, roughly from Imperial Rome to Late Renaissance and beyond, allows Dwyer and Lothian (Part I) to abstract from the national limitations of central bank money. Indeed they emphasize that the coinages they consider achieved their greatness and acceptability by human action rather than design, i.e., by free choice rather than government intervention or monopoly. They examine what characteristics gave certain gold and silver coins wide circulation in Europe and the Middle East for centuries. The answer appears to lie in a combination of trust, solid reputation, and convenience in use.

Trust is earned through exact quality control with regard to weight and fineness that is maintained consistently over time. Trust lowers transaction costs through standardization in that it makes frequent checking (assaying) unnecessary. It thereby

facilitates wide use in trade and rudimentary finance, contributing to both the extensive and intensive margin of reputation. Trust in wanting to uphold the fidelity of the coinage far into the future is strengthened by the issuer having gained a reputation for having a firm and steady grip on power, a thriving empire or state, and a decent regard for long-term consequences. A reputation for assured maintenance of weight and fineness, and hence to an extent also of purchasing power over goods and services, in turn, qualified a particular coinage to serve as the denomination of bills of exchange that could circulate over a wide area as bearer certificates until the due date.

Finally, certain physical characteristics of commodity money helped give it wide (to avoid the anachronistic term “international”) use. For instance, because a single high-valued coin is more compact and easier to transport than stacks of low-valued coins of the same fineness summing to the same weight, large-value coins traveled farthest and circulated over the widest area. Some of the characteristics that allowed gold coins like the *solidus* (later known as *bezant*) to be accepted from end to end of the known world remain relevant for the international adoption of a brand of money today. The comparative riskiness and usefulness of different moneys is critical and both of these characteristics depend on size and security of a country’s trading network. A difference with today is that the quality of a fiat money cannot be ascertained by monitoring physical characteristics but requires monitoring a foreign government’s monetary policy objectives and the robustness of the political consensus that supports them. Compared with the commodity ideal of “stateless money,” moneys thus inevitably have become more political.

Moneys used by several countries now are managed either by a national government or by a supranational institution of states, depending on whether unilateral or multilateral monetary union is involved. Angeloni (Part I) contrasts these two forms. Unilateral monetary union or dollarization means the adoption by a country of the money of another, without this implying any common consent or agreement on its adoption or any of the ensuing operational consequences. Multilateral monetary union results when two or more countries decide to adopt a common currency that may be different from any of the existing ones, to set up the necessary monetary institutions, and to make monetary policy decisions by way of a common and consensual agreement. As Angeloni explains further, in a unilateral monetary union, monetary policy is automatically geared to smooth only the shocks hitting the anchor economy, leaving the dollarized economy a passive partner. By contrast, each member of a multilateral monetary union obtains a “quantum” of the joint monetary stabilization which it helps co-determine although it may still have difficulties if its stabilization needs are quite out of sync with those of the other members.

Both Angeloni and Salvatore (Part I) explore salient differences between the two types of monetary union in other respects as well. Angeloni, for instance, cites a large imbalance among the participants, either in terms of size, credibility, or political influence as a likely disqualification for a multilateral solution. Because adoption of the euro by accession to EMU entitles each country to one equal vote on the Governing Council, which is the supreme decision-making body of the European Central Bank (ECB), smallness can lead to disproportionately large representation. However, this

problem should not be sidestepped by barring small countries from membership permanently, leaving unilateral adoption of the euro as their only option. Rather it should be solved by changing the vote distribution eventually to correspond more closely to that of paid-up shares in the ECB's capital or to a similar key that respects differences in demographic and economic dimensions of country size.

Similarly, the ECB's attempt to treat formal unilateral euroization as a permanent obstacle to accession to EMU, even when states much larger than European micro states such as Andorra, Monaco, and San Marino are involved, is based on one or more of the Maastricht criteria being inherently inapplicable to such countries. Salvatore points to another dilemma, between achieving stable exchange rates and stable prices, being posed by Maastricht criteria for candidate countries with high rates of productivity growth in tradable goods. According to Nauschnigg (2002), however, the EU and the Eurosystem have made clear that for EU accession countries the Maastricht criteria must be upheld without derogations that would take account of structural differences. Furthermore, unilateral adoption of the euro, euroization, is not an acceptable step toward EMU. This official position must be reconsidered to preserve the dynamism of the multilateral concept of monetary union that is Europe's gift to the world. Europeans perceive a cumulative logic of integration, whereby one step of integration functionally calls for another in the way that economic union calls for monetary union to protect it. This logic should be preserved even though it has not yet reached either NAFTA or the Free Trade Area of the Americas (FTAA) agreement that is currently being negotiated.

Fixed exchange rates require sacrifice of an independent monetary policy even in normal times, but no monetary policy may be able to foil a determined speculative attack. Floating (more often, sinking) exchange rates, on the other hand, can be very destabilizing to the domestic economy of emerging-market countries and to their inflation and growth performance. In a world of large capital flows and integrated capital markets, the effectiveness of an independent monetary policy is in any event quite limited. Both Argentina and Brazil experienced this helplessness in different ways once again in the first half of 2002. On the other hand, even if nominally floating, exchange rates with inflation targeting cannot in fact be allowed to move much in either direction without either missing the inflation target, due to depreciation, or laying in store external debt and balance-of-payments crises, due to overvaluation.

Compared with these tribulations, multilateral monetary union would involve less loss of monetary control than simply fixing a country's exchange rate with a key currency. It would also stabilize those capital flows that are sensitive to exchange rate expectations and currency risk for the country in question. Overall, exposure to exchange-rate volatility would be reduced unless greater volatility between the leading currencies, in particular, U.S. dollar and euro, outweighs the elimination of nominal exchange rate volatility among members of the euro zone with each other. A good inflation performance would be all but guaranteed. Hence monetary union, even if only unilateral except in the vicinity of the euro area, emerges from the overview chapters in Part I as a superior choice for many emerging-market countries.

1.3 Introduction to Part II: Trade and Price Effects of Monetary Union

In the effort to quantify the gains from EMU, the European Commission (1990) came up with figures of 0.1 to 0.4 of one percent of GDP. These numbers result mostly from the elimination of bank charges for converting currencies and for contracts protecting against exchange risk. But the Commission strongly emphasized the possibility of wider gains stemming from the increased integration of goods and capital markets. For these other gains they offered no numbers. Those gains are also elusive. Still, a recent study by Rose indicates that the numbers could be large – much larger than ever anticipated before. In a test of a gravity model covering a worldwide sample of countries, Rose (2000) reported that monetary union more than triples bilateral trade. Some have expressed doubts about these results on the ground that they rest on a small sub-sample of observations consisting mostly of tiny countries. Yet the tests include controls for the size of the trading partners, as measured in a number of ways: by GDP, population, and land area. They also control for distances, common borders, common language, political union, free trade agreement, and past colonial relationships. Consequently, many researchers have taken Rose's results to heart, and have tried to refine and explain his findings.

The first three chapters in Part II, by Méltiz, Rose and Nitsch, belong to this next literature. The closing chapter, by Isgut, pertains to a closely related issue. It deals with the impact of monetary union on the integration of markets via prices of goods and services. The chapter shows that monetary union promotes the law of one price, and as such, supports Rose's conclusion that monetary union enhances trade and competition.

Every contribution to this Part relies on the gravity model of trade. A fundamental aspect of that model is that greater distance between two countries reduces the bilateral trade between them. Mélitz begins by pointing out that this feature is curious in one respect in that the Ricardian model of trade could suggest that increased distance in some dimension will promote trade. So far as countries are further from one another along the North-South axis, there will be differences in climate, plant and animal life between them. There could also be differences in required insulation, cooling and heating. Those differences will then promote trade based on comparative advantage, and the relevant promotion of trade may go beyond agriculture and the extractive industries to cover construction, energy consumption and optimal production technique. On this hypothesis, Mélitz introduces the absolute value of differences in latitude between countries. After controlling for distance in the usual sense, he finds that the index of differences from North to South consistently enters very significantly with the expected *positive* sign in the bilateral trade equations. Moreover, the presence of this additional variable does not detract from the negative influence of distance, as measured in the usual fashion.

Mélitz next tackles the basic problem of the improbably large impact of distance on foreign trade in gravity models. With each percentage-point increase in distance, usual estimates indicate around a percentage-point or more decrease in trade. This is considerable. On account of the progressive decline in transportation costs since the mid-nineteenth century, the impact of distance on foreign trade should have fallen. Then why does greater distance still appear to be an important impediment to trade? To help solve this puzzle, Mélitz proceeds by distinguishing between a substitution and a scale effect of

distance. Specifically, he breaks down distance between two trading partners into the distance between them relative to all foreigners, and their distance from all foreigners. Greater relative distance between them should yield a substitution effect on their trade with one another relative to the rest: it should damage their trade with each other *in favor of trade with those foreigners who are closer*. But their distance from all foreigners (on average) should damage their foreign trade generally, including their trade with one another, *in favor of domestic trade*. On this view, it would not be strange at all if relative distance affected trade increasingly over time as transportation costs fell. This development would simply mean that as the distance barrier fell, distance became more significant in deciding *how far* goods would travel abroad. Only distance from all foreigners – or “remoteness” – should diminish in importance over time.

The distinction between relative distance and remoteness turns out to be significant for explaining the geography of trade in Méltiz’ sample for 1970-1995. The two factors enter separately with the expected negative sign. In addition, relative distance is decidedly the more important of the two influences. This finding helps reconcile the earlier evidence concerning distance with the facts about transportation costs.

Finally, Méltiz deals with the effect of political influences on trade, including the influence of free trade association, former colonial ties, and currency union. At this juncture, his focus shifts to Rose’s earlier spectacular results about monetary union. In Part II of this volume Rose counts 19 studies that have dealt with these results thus far. The number of estimates of the effect of currency union on trade in these studies (383) is sufficiently large for meta-analysis. In other words, Rose (Part II) is able to consider the

estimates as a set of observations about the true parameter regarding the impact of currency union on trade. He can thus apply statistical analysis to the observation set. This analysis leads him to conclude in favor of a doubling rather than a tripling or more of trade. In addition, this next estimate does not depend on his own many contributions to the 19 previous studies, and it is statistically highly significant.

Even before obtaining the results reported in this volume, based on the work in Rose and Glick (2002), Rose had already relied more on the estimate of a doubling of trade. It may be interesting to show why this more recent estimate has greater merit than that by Rose (2000). Rose's original estimate of the effect of monetary union on trade is not only large, but larger than his corresponding estimate of the effect of other political ties, like free trade agreement or political union, on trade. It is hard enough to see how monetary union could triple trade. But it may be even more difficult to understand how a single currency could foster greater trade than the elimination of tariff barriers or being in the same country. As a result, there had been an earlier suspicion that Rose's estimate of the impact of monetary union mixes up effects of a single currency, free trade and political union. The countries that enter into monetary union with one another often have close political ties in other respects as well regardless of whether they have signed a free trade agreement or are party to any other political pact.

In his subsequent work with Glick, Rose uses a much larger set of panel data than in his original paper, consisting of annual time series and going back as far as possible in time. That is, his new data set contains a true time-series dimension as well as a cross-sectional one. This added dimension permits him to estimate separate "between" and

“within” coefficients for the impact of monetary union. The “between” coefficient relates to the cross-sectional effect. In this regard, the Glick and Rose study does not differ from Rose’s earlier one, thereby sustaining the suspicion that the estimate concerns a joint effect of membership in monetary union and the closeness of other political ties. But in the case of the “within” effect that captures the impact of entry and exit from monetary union they obtain a markedly lower estimate. This new coefficient, which is quite in line with the result of Rose’s present meta-analysis, is also statistically very significant. It implies a “mere” doubling of trade.

Yet even a doubling of trade is considerable. Skeptics will therefore wish to dig further. They may even wish to question Rose’s general statistical approach. One possibility is to insist on case studies, and therefore to examine, for example, the exit of Ireland from monetary union with the UK (Thom and Walsh, 2002), or the decision of Luxembourg and Belgium to form a monetary union (Nitsch, 2002). Another tack is to insist that there is a severe problem of heterogeneity in the data, and therefore to require matching techniques between individual country pairs (Persson, 2001).

Nitsch (Part II) belongs somewhere between these two extremes. He tries to control for heterogeneity by studying only a single monetary union at a time and by compiling a balanced sample, consisting only of members and non-members that are in the same geographical region and of comparable economic size. This is his procedure in studying the East Caribbean currency union and the CFA franc zone one. In both cases, he uses a gravity model. His estimates show a doubling of trade in the example of the CFA franc but no significant impact of the East Caribbean currency union. In both

instances, adding country fixed effects blunts many of the results, not only for currency union but for other basic variables. Nitsch also experiments with cross-effects between currency union and output and finds them significant. This finding is unexpected in that the usual theoretical derivations of the gravity model with homothetic utility functions and constant returns to scale in production imply no cross-effects of output with anything else.

A closely related literature deals with the effect of political borders and the borders of currency areas on price dispersion. This literature once again initially obtained unbelievably large effects of political borders, in this case on price differences between regions (see McCallum, 1995; Engel and Rogers, 1996). True to the previous pattern, this led to research showing that the high estimates are exaggerated (Anderson and van Wincoop, 2003; see also Feenstra, 2002). One of the suspected reasons for the sizable impact of political borders on price deviations has always been a difference in currencies. Parsley and Wei (2001) confirm this hypothesis. Isgut (Part II) adds new variables and goes further than Parsley and Wei in showing that different currencies impede the law of one price. Closer adherence to the law of one price implies closer trade ties. Thus, the findings of Isgut and of Parsley and Wei support Rose's conclusion that monetary union increases competition and trade, and they do so with completely different data sets. These sets consist of observations for prices of individual goods and services in many cities in different parts of the world. Importantly Isgut finds not only that monetary union reduces price dispersion, but that such union is "one order of magnitude more important than a mere reduction in exchange rate volatility."

1.4 Introduction to Part III: Exchange Rate Disjunction in Argentina and Mercosur

Empirical experience with economic integration reveals three basic facts: First, economic integration can be a long and difficult process. Second, deep and durable economic integration is not possible without monetary integration. Lastly, in a globalized economy with liquid international capital, a greater degree of monetary integration than at present is unavoidable because small currencies are subject to currency substitution and vulnerable to currency crises. As such currencies can efficiently serve ever fewer functions, they become hollowed out through currency and asset substitution.

All chapters in this Part reflect the importance of one or more of these basic facts as they focus on the troubled process of financial and economic development and regional integration in Latin America. First Fernández-Arias, Panizza, and Stein (part III) analyze the attempts of Mercosur to stimulate economic integration exclusively by trade agreements, leaving exchange rate policies in the hands of the individual countries. One central conclusion is that integration successes are very limited without exchange rate agreements because misalignments increase protection policies between member countries, scale back or eliminate free trade arrangements, dislocate foreign direct investments and often lead to currency crises with severe negative impacts on the real economy. It turns out, that in addition to trade agreements, monetary integration with exchange rate coordination is necessary to safeguard and promote economic integration.

In particular, the design of monetary integration should preclude severe exchange-rate misalignments and enable qualified borrowers in the member countries to have continuing access to the world capital markets in order to avoid currency crises. The past

situation of Argentina is a striking example of incompatibility. The different exchange rate regimes in Argentina (currency board with the U.S. dollar, 1991-2001) and Brazil (free float since January 1999) led to a significant real overvaluation of the Argentine Peso after the devaluation and subsequent depreciation of the *real* in 1999 reduced the relative competitiveness of Argentine products in Mercosur markets. By the middle of 2002, that situation had turned into its opposite as the freefall of the Argentine peso after the collapse of the currency board had overtaken the cumulative decline in the U.S. dollar value of the *real*. This was putting pressure on Brazil, further straining what was left of economic cooperation in Mercosur and calling attention to the need for monetary cooperation and exchange-rate stabilization between its largest members. In 2003 the debate resumed on whether, in order to stabilize internal exchange rates, Mercosur should return to a common external anchor, the U.S. dollar, or whether it could credibly evolve its own zone of stability that let member countries float jointly against the dollar.

Ecuador's experiment, touched on by de la Torre et al. (Part III) sheds some light on a contrasting experiment in Latin America: Ecuador introduced the dollar unilaterally in March 2000 because the country tried to import stability after decades of fruitless internal efforts to implement reforms necessary for stable economic development. Its unprepared unilateral entry into a monetary union implied that all necessary adjustments had to take place after formal dollarization. Therefore, the economic performance of Ecuador during the time period immediately after the introduction of the dollar as sole legal tender is critical for an initial appraisal of the strategy of monetary union first, adjustment and institution building later.

A first interesting fact of the Ecuadorian experiment is the high inflation, after the introduction of the dollar. It peaked at 108% (annual rate) in September 2000. Unstable monetary and fiscal policies, volatile exchange rates, currency substitution, and a large underground sector preceded Ecuador's decision to dollarize. To find the correct exchange rate to start with then is nearly impossible. If the conversion rate to U.S. dollar is set at the wrong level, it may lead to severe economic disturbances immediately after the dollarization. In case of an undervaluation of the home currency, the initial dollar prices are too low leading to high inflation rates after the original fixing. Although this inflationary shock is transitory, it may have significant impacts on wages and public deficits. We can conclude that success in importing stability immediately after the introduction of the dollar is far from certain, although after a year of difficulties of transition, financing terms and growth in Ecuador for a time improved. Whether even formal dollarization is strong enough to rein in fiscal deficits to levels compatible with both economic and political stability remains to be determined. If not, national money or its surrogates may be brought back in a future crisis.

Tensions between the requirements of trade and exchange arrangements not only bedevil regional common markets like Mercosur as discussed in Fernández-Arias, Panizza, and Stein (Part III), but individual countries as well. In Argentina, for instance, financial considerations and investor preferences favor dollarization while trade and optimal currency area (OCA) criteria speak against it. This led to harsh policy dilemmas brought out by Perry and Servén (this Part).

In a recent evaluation of monetary regime options for Latin America, Berg, Borenszstein, and Mauro (2002) conclude that dollarization would be desirable only for those countries where there are strong links to the U.S. economy, the credibility of the monetary authorities is irreversibly lost, and there is keen demand for dollar-denominated financial assets. Except for some small countries in Central America, no country in the Western Hemisphere would meet all three conditions. Argentina has long met the last. On the other hand, its monetary authorities have lost credibility, but never irreversibly, since they have managed to lose it again and again. Argentina also does not have strong economic links with the U.S. although it has close links with Brazil that for about four years ending early in January 1999 maintained a near-fixed nominal exchange rate with the dollar through a very slow crawl. In this regard the list of three principal criteria is incomplete in that it fails to consider that the desirability of U.S. dollarization by one country is also a function of whether neighboring or other countries with whom it trades intensively are either dollarized already or planning to dollarize also.

Argentina is an unrewarding client for exchange rate advice because it is difficult to come up with sound practical advice for a country whose governments have displayed such limited capacity to execute consistently, the currency board established by the (one peso per U.S. dollar) Convertibility Law of 1991 being the latest casualty. No matter what exchange-rate regime Argentina adopts, or subsequently defaults into, such as floating, the road, in the words of Berg, Borenszstein, and Mauro (2002: 34) “looks difficult either way.” This makes analyzing its latest shattering crisis, and its complex

pathologies, one of the severest challenges posed in recent years. It has been confronted by three teams of leading international-finance professionals in this Part.

All three contributions recognize that fiscal unsustainability and debt problems were lurking just below the surface waiting to be brought into the open by anything that would depreciate the equilibrium level of the real effective exchange rate in a major way. For Calvo, Izquierdo, and Talvi (Part III) one possible trigger event was the Russian crisis of August 1998 that caused a Sudden Stop for most capital imports. As this Stop turned out to be unexpectedly persistent, it eventually induced emergency “reforms” and fiscal retrenchment. These catch-up measures proved in retrospect as too little, too late as they pushed against the political limits of pain toleration. Difficulties were compounded by Argentina’s being a relatively closed (C) economy in terms of the supply of tradable goods. Such closedness raises the real-exchange rate change needed to achieve a given amount of adjustment well beyond what is achievable expeditiously under a currency board if wage and price flexibility are quite limited. At the same time, de facto dollarization (D) of a large part of bank, business, and government liabilities -- and the currency mismatches (M) involved -- heighten susceptibility to real exchange-rate changes. As a result, the intermediation system is in jeopardy and its liquidity destroyed in the event, or at the mere hint, of an exchange-rate crisis.

Elements of this CDM syndrome also appear in de la Torre, Levy Yeyati, and Schmuckler’s account (Part III) of how banking-system solvency became linked to fiscal solvency and both became predicated on the avoidance of a currency crisis. Every attempt to solve one problem, such as the government’s inability to place debt with

willing holders, tended to aggravate another, for instance, by saddling the banking system with what turned out to be bad government debts. A hard peg that was not supported by alternative flexibility in nominal wages and in fiscal spending and financial contracting turned into a Faustian bargain raising exit costs to catastrophic levels without holding off the catastrophe in the end. An interesting suggestion for escaping from the final settlement to this bargain is stock dollarization with pesification at the margin as a possible strategy for exiting from the currency board with least damage and growing flexibility. This combination of measures might possibly have succeeded in amortizing currency-board obligations without confiscation while still permitting transactions-currency pesification of new business and nominal exchange-rate adjustments. Initially at least, a high degree of portfolio dollarization could thus more safely be retained.

Perry and Servén (Part III) assess the claims by the previous two teams of authors and emphasize endogenous propagation through a system of mutually aggravating vulnerabilities. These led to such high degrees of cross-exposure and sensitivity to even small shocks that no big external crisis was needed to start a fateful hemorrhage. They agree with Calvo et al. (Part III) that the real appreciation of the peso over its equilibrium was about 50 percent before currency board commitments started to be broken one by one until floating was formally adopted in February 2002. (Perry and Servén, at the end of their chapter, provide a complete chronology of the crisis.) But under the regime in place before, the cure would be quite as frightening as the disease. For while a nominal depreciation may improve the capacity to pay debtors in the nontradable sector on account of the debt dilution that may result from its inflationary effect, it has the opposite

effect if there is widespread liability dollarization in that sector that includes the government. Hence tougher loan classification standards should be applied to claims on that sector. Furthermore, it is imperative to delink financial system solvency in countries with recurring fiscal difficulties from sovereign debt quality problems by imposing mark-to-market and risk-weighted capital requirements, reinforced by exposure limits in percent of total bank assets to government debt. Otherwise stress testing and risk analysis for the effects of an assumed exchange-rate change in Argentina on both the condition of banks and the fiscal solvency of the government would continue to show much greater vulnerability in Argentina than appears from an analysis of pre-crisis conditions in a comparison group of Latin American countries. Having hands and feet tied is quite likely fatal once a country falls into deep water though it also gives the country a strong incentive to stay away from the edge.

Taken together, this Part thus focuses on practical compatibility and policy conundra facing countries in difficulties. Whether the tension is between trade agreements and exchange rate disagreements or between the need for time-consuming reforms and the impulse to seek salvation through the adoption of an international money without them, choices are being made down in the area of second or third best. As long as countries are saddled with a legacy of bad government, inadequate institutions, and poor economic policy, nothing better may be available. And as de la Torre et al. (Part III) point out, the pure fix versus float dilemma is false as there is a need to build institutions that provide for adequate flexibility and control in either case.

1.5 Introduction to Part IV: Common Money, Political Interests, and Infrastructure

Parts I and III of this volume explore the rigors and possible advantages of monetary union for unilateral adopters or countries planning to accede to an existing monetary union. This part focuses instead on the optimal size and design of monetary union from the point of view of the producers, rather than the consumers, of currency consolidation services in their region. It discusses the financial infrastructure that is adopted by the members of a multilateral monetary union, and the level – national or supranational – at which its different elements should be supervised and regulated.

The state of the financial infrastructure of a dollarized country is likely to be determined by the anchor country and its financial institutions. Hence for the anchor country, Cohen (Part IV) points out, monetary power is a component of state and business power. For the dollarized country, however, such “institutional substitution” (see Mendoza, 2002) carries both opportunities and risks. Foreign adoption of the U.S. dollar creates currency dependence that can and has been exploited by the United States for its political and economic benefit.

Why then does Cohen find that the rational self-interest of the United States in actively promoting dollarization may in fact be quite limited? One reason is that entrapment – the transformation of a state’s interests and policies in recognition of its currency and banking dependence, can work both ways: The currency leader’s autonomy may eventually be compromised by a need to discourage de-dollarization or substantial currency conversions through the exchange market. Regardless of the absence of formal obligations or insurance commitments, there may be pressure on the United States to

keep countries that have relied on the dollar and U.S. financial institutions from foundering in a major financial crisis. U.S. prestige and its reputation for fair dealing may be at stake. Hence, even if the Federal Reserve focuses solely on the economic welfare of the United States, as is its mandate, that welfare could become closely intertwined with that of other countries once they have become near-integral parts of U.S. business and finance. It is difficult to see how increasingly multilateral organization of the dollarized area then could be avoided to better manage this mutual risk exposure, also from the side of the United States. The only other alternative in the long run might be to keep dollarization from spreading very far so that the United States can safely ignore the activities and welfare of dollarized countries, should it choose to do so.

Even without pushing dollarization beyond the current margin, the international role of the dollar appears secure. To the extent countries compete for international financial business and “denomination rents” only according to the rules of the market, currency and asset competition is unlikely to put the dollar on the defensive. Given the continuing decline of the yen as an international currency and the resurgence of the dollar as the external anchor currency in much of continental East Asia (McKinnon, 2001), expansion of the euro area will not mean a corresponding reduction of the role of the U.S. dollar in the world. Recently new factors have come into play. For instance, since 2002 the U.S. government has become more aggressive in seizing or encumbering accounts held in U.S. and foreign banks under new laws and regulations that were of its own, increasingly inscrutable, design and application. This may have caused some loss of international good will for dollar versus euro. Because the need for reaching multilateral

agreement implies mutual checks and balances, EMU members are far less able jointly to exploit the political advantages of currency hegemony than the United States can do on its own. Hence one of the differences between unilateral and multilateral monetary union surely is that the latter produces a common money with less of a political hook.

What can we learn from West European monetary integration for the process of accession of Central European Countries? The experience of formerly unstable late-accession countries such as Greece shows that countries can implement reforms to achieve economic stability without serious recessions provided they strictly and credibly adhere to their stabilization strategy and have a realistic chance to become full members of EMU within the foreseeable future. Indeed, in at least one respect the situation is easier for Central European countries now than it was for unstable West European countries a dozen or more years earlier: They can join an existing 'stability union' rather than having to build one. To enter EMU, they must of course still bring down inflation, restructure their labor and capital markets, and achieve sound fiscal positions.

Unlike Western European countries, Central European countries are subject to massive currency substitution. Dollars and more and more euros are used as a co-circulating medium of exchange and store of value. The study by Feige and Dean (Part IV) analyzes processes of currency substitution in all major Central and East European economies. The authors address problems of measuring the extent of currency substitution separately from asset substitution in these countries and obtain new empirical evidence using both direct and indirect methods of calculating the use of foreign currencies as a store of value. In this way they try to redefine the data concepts that

should be used to measure the degrees of currency and asset substitution and dollarization in East European countries. Because different methods yield very different estimates, further empirical investigation clearly is necessary to pin down the extent to which foreign currencies are used in transition countries and for what purposes.

In a second step, Feige and Dean analyze which currency will be dominant in the future (U.S. dollar or euro) depending mainly on the probability of a country's becoming a member of EMU. One interesting aspect is that currency substitution leads to irreversible structures because suitable network externalities are necessary for transactions denominated in the co-circulating foreign currency. If we assume that currency substitution in favor of the euro will be increasing in all countries deciding to become members of EMU, the question arises: Should these countries introduce the euro early or should they wait until they have successfully passed the whole Maastricht-type qualification period? Of course financial markets will both anticipate and constrain political decisions in this area by generating their own *faits accomplis*.

In this regard Costa Storti and De Grauwe (Part IV) offer a technological take on the optimal size of a currency union. They point to an intermediate solution well short of a single global money even though there are network externalities to the use of money in demand and economies of scale in its supply. They regard currencies as representing networks with separate payment and settlement systems and a variety of other network-specific protocols that are not completely compatible with each other. This makes monetary union equivalent to a merger that erases these match-up and transfer difficulties between networks. Arranging for convertibility between separate currencies has far less

of a network expansion effect than a complete merger. It allows only interconnections well short of complete integration on account of transaction, communication, and exchange translation costs and risks. Hence on the face of it, a dominant monetary union could be programmed for unlimited expansion ending in a single global money.

Costa Storti and De Grauwe find several factors that might check such a tendency. Network externalities and the corresponding willingness to pay for more users may well cease to increase at the margin. At some high level, the size externalities of absorbing yet more systems at the outer fringes of a zone of economic activity may simply fail to offset the added costs of doing so. In addition, the loss of national control that is in store for late-accession candidates is greater the larger the number of existing members already. The new internet-based information technology (IT) also could help support the continued existence of several moneys by strengthening the variety and depth of interconnections between the existing national monetary networks and reducing transaction costs between them. Given the difficulty of organizing multinational approaches to merging national monetary networks – a merger that is still incomplete even in the euro area – the IT-driven reduction in the cost of interconnecting the national systems could then allow a number of them to co-exist. On the other hand, the new IT also may destabilize fixed exchange rate systems by facilitating speculative attack, and any increase in exchange risk due to floating would tend to lower connectivity.

Costa Storti and De Grauwe ultimately conclude from all these opposing factors and considerations that the new IT may *increase* the optimal size of monetary unions to

some degree. However, the main value of their pioneering effort lies in carefully sorting out the underlying economic issues and not in this tentative conclusion.

The remaining two chapters deal not with the optimal size of a monetary union but with the optimal distribution of functions within it. There is a catch-22 situation shaping up for countries that, because they are seeking accession to EMU, invite substantial euroization in the years leading up to that event. This makes meeting the Maastricht criteria more difficult and reduces the benefits from accession. If the euro is thought to become the official money of a country, contracts will not wait for that step: The trigger that makes many agents switch their currency use in a coordinated fashion could be the announcement of an upcoming official changeover, according to Genberg (Part IV). If a country instead had kept its monetary base in its own currency, it would have been able to convert that base, including its currency component, for free. Under unilateral euroization, however, a loss of international reserves or a reduction in the net foreign asset position of the central bank is involved in acquiring the euros.

Genberg argues that it would be unfair that new members in the EMU should have to spend real resources to obtain euros when original members did not have to do so. One way to remedy this situation is for the central bank to receive euros equal to the money in circulation at the beginning of the transition period rather than at its end. On the other hand, the euro or one of its precursor currencies such as DM, has accounted for a substantial fraction of the money supply of some accession countries for decades. Hence even compensation for domestic currency held at the beginning of the two-year

transition period provided in the Maastricht Treaty may not be enough to establish equal treatment between the original members and newcomers to EMU.

Kahn and Santos (Part IV) delve further into the internal arrangements of the European System of Central Banks (ECSB) and the optimal division of responsibilities between national agencies and the ECB for bank supervision and lender of last resort (LLR) functions. Angeloni (Part I) had seen a logical coupling between the two functions. He found decentralized LLR consistent, from an incentive viewpoint, with the fact that banking supervision is provided nationally. In his view, this in turn reflects the fact that any costs of financial rescues fall on the national taxpayer.

Kahn and Santos consider and model this matter in depth by taking into account the incentives of regulators, i.e., the bureaucrats in charge of administering the bank regulatory program or programs. Regulators' objectives are some combination of what is socially desirable and what would arise from the assumption of bureaucratic costs. In the case of bank supervision, bureaucratic costs arise from the current resource costs of prudential supervision and the capital costs of reputation-building for the regulatory agency. They can also arise from the lack of supervision or timely intervention if the agencies that employ these bureaucrats also have to bear the costs of bank closure and of other costly consequences of forbearance and neglect. But bureaucratic costs do not internalize moral hazard effects of bureaucratic practices on the system, and this explains why a course of action may be socially undesirable even when bureaucrats would choose it. Regulatory theories of institutional design attempt to reduce this conflict, in this case

by determining the optimal level, national or supranational, to which a regulatory function should be assigned in conjunction with others.

Using this approach and concentrating on the efficiency of the banking system, Kahn and Santos arrive at a conclusion different from that of Angeloni: Leaving regulatory systems at the national level when banking markets have already become integrated across the member countries of a monetary union reduces the systems' effectiveness. But if only one set of regulators is to be integrated, it will be more effective to integrate the supervisory function and leave the LLR function at the national level. The reason is that integrating the LLR function and spreading its cost over all members while leaving the supervisory function at the national level could eliminate the incentive of the supervisor to engage in monitoring. Thus the order of centralization of these functions has important welfare consequences when banking markets are integrated while some or all of the regulatory functions initially are not. While Kahn and Santos rely entirely on theoretical models to reach this conclusion, Barth *et al.* (2002) have provided much complementary empirical evidence on how the structure, scope, and independence of bank supervision affects the banking industry.

Overall the impression emerges that just as it is difficult to see how unilateral monetary union could spread very far without developing multilateral features, multilateral monetary union is a work in progress that must avoid becoming surrounded by too many unilateral complements. Several features of EMU, tailor-made for the founding members of the club, are not fair, suitable, or hospitable to candidates for accession. Furthermore, the current division of functions between national and

supranational levels within the euro area may not be appropriate. While a monetary and financial success, and a clear spur to economic growth and convergence of peripheral countries, EMU has yet to yield salient growth or stability benefits for the core countries. This may explain some of the core countries' reluctance, as gatekeepers of the system, to facilitate expansion of EMU on altered terms or to acknowledge that the Eurosystem is already in need of major reforms.

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page 46 of 46

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