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One World, One Currency: Exploring the Issues

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by Martha A. Starr [*]

Abstract

Along with globalization of trade and finance has come a certain globalization of money. Some countries have adopted monetary unions and currency boards; others increasingly use international currencies in place of national monies. This paper explores the idea, proposed by Keynes in 1944, of a global money –- framed here as a voluntary, representative arrangement based on accepted principles for optimal conduct of monetary policy. It is argued that, if the current pace of economic and financial integration continues, a global money may emerge that is better adapted to internationalization of production and exchange -- although such a change may be a long time in coming.

Key words: International monetary arrangements, monetary systems, economic integration and globalization

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One World, One Currency: Exploring the Issues

"A global economy needs a global currency."

-- Former Fed Chairman Paul Volcker

Introduction

Along with globalization of trade and finance has come a certain globalization of money. For much of the 20th century, the main monetary paradigm was a national central bank issuing a sovereign currency; as the number of countries increased, so too did the number of currencies. A small number of mostly small countries used a foreign currency for domestic currency, as with Panama, which has used the U.S. dollar since 1903. But for the most part, countries had their own currencies, their own monetary policies, and their own central banks.

Yet the monetary landscape has changed importantly in recent years. After a long period of economic and political integration, in 1999 12 European countries began implementing a common monetary policy based on a common currency, the euro, which went into circulation in January 2002. Another three EU members opted out to stay out of the monetary union then, but may at some time join. In addition, the accession countries slated to join the EU have to adopt the euro when they join. The European currency has also been important in the transition economies of Central and Eastern Europe: given the uncertainty and high inflation that came along with the transition, strong international currencies were sought-after as a store of value, to the extent that 40% of newly printed German marks were estimated to be leaving the country at one point, and several governments hard-pegged their currencies to the mark and then euro via currency boards (Seitz 1995). About 650 million people live in what will eventually be a broad euro zone, including countries whose currencies are hard pegged to it.[1]

The other important phenomenon has been 'dollarization.' Especially in emerging-market countries struggling with high inflation and persistent macroeconomic imbalances, populations 'voted with their feet,' opting to use the U.S. dollar in place of or alongside domestic currency as a unit of account, store of value, and/or medium of exchange. Overseas demand for the dollar was so strong that, in the mid-1990s, it was estimated that 2/3 of newly issued currency was going overseas (Porter and Judson 1996). Some countries dollarized officially, either by establishing a currency board (Argentina 1992-2001) or by taking domestic currency out of

[1] See below. This includes 157 million people in the CFA franc countries of West and Equatorial Africa, whose currency is hard-pegged to the euro and backed by the French Treasury. On the use of the euro or hard euro-pegs in countries outside of Europe, see Islam (2001).

circulation and replacing it with the dollar (Ecuador, El Salvador). But most countries making significant use of the dollar are 'partially dollarized' –- that is, using the dollar as well as the national currency in the traditional functions of money.

The changing patterns of money use across the globe raise important policy questions. On one hand, this broad rise in the use of major international currencies raises questions about the desirability and feasibility of maintaining national monetary policy, based on central banking and sovereign currency –- to the extent that George von Furstenberg (2001) has suggested that national currencies of smaller countries may be 'endangered species.' On the other hand, the euro and especially the dollar are increasingly in a position of being both 'national' currencies and widely used substitutes for other countries' currencies, while being managed with respect to domestic considerations only. This stirs up old questions, raised by Keynes in 1944, about whether the world economy might operate more smoothly with some form of global currency.

This paper outlines some of the issues involved in contemplating the idea of a world currency. While many influential economists (from Paul Krugman to Jeffrey Sachs) are highly skeptical that this can or will work, many others (from Robert Mundell to Robert Barro, and even at times *The Economist*) view it as an excellent idea that would reduce the extent to which gyrating values of money upset the world economy. The paper first summarizes theoretical perspectives on monetary integration and relates them to empirical patterns in monetary arrangements around the world. The second section discusses the strengths and weakness of the current international monetary system, in which the U.S. dollar constitutes the central currency in international trade and finance, the major world currencies float against the dollar and against one another, and other currencies either attach themselves in some way to these currencies or themselves float. The third section elaborates on the idea of a global money, conceptualized as a supranational monetary arrangement for which membership is voluntary, and that would operate according to accepted principles for optimal conduct of monetary policy -- for example, having a decision-making body that is shielded in its operations from short-run political pressures, yet is also representative, accountable, and guided by public mandate. The fourth section discusses practicalities involved in moving towards monetary arrangements that are global or broad-based in scale, and a final section concludes. In brief, it is argued that, if the current pace of economic and financial integration continues, a global money may emerge that is better adapted to internationalization of production and exchange -- although such a change may be a long time in coming.

Monetary integration: Theoretical perspectives and empirical patterns

Much work relevant to conceptualizing monetary integration is inspired by Robert Mundell's (1961) classic work on optimal currency unions. Mundell argued that, because monetary union would save on transactions costs, gains from monetary integration would be greatest for countries with relatively high volumes of trade between them. Furthermore, because an individual country could no longer use monetary policy to stabilize its own prices and output, it would be best to have unions among economies that have positively correlated macroeconomic fluctuations, so that a 'one-size-fits-all' monetary policy would still be fairly appropriate to the circumstances of each. This literature has been substantially refined and updated in the course of analyzing issues of European monetary integration [see, for example, Canzoneri and Rogers 1990; Canzoneri, Grilli and Masson 1992; Wyplosz 1997; McCallum 1999]; many think the EU qualifies as an optimal union, although not all agree.[2]

Yet for many emerging-market countries, the appeal of monetary integration concerns not just trade, but of enhancing the credibility of monetary policy. Kydland and Prescott (1977) and Barro and Gordon (1983) called attention to a time consistency problem in monetary policy: if output responds positively to unexpected inflation, policymakers will be tempted to enact inflation surprises to push output up -– but the public will come to expect this, resulting in a situation where inflation is on average too high, but without beneficial effect on output. While advanced economies have apparently solved this problem by delegating monetary policy to independent central banks with mandates to stabilize output and prices,[3] sustained commitments to modest inflation have been more difficult to achieve in emerging-market countries.[4]

Models developed by Alesina and Barro (2002) and Alesina, Barro, and Tenreyro (2003) explore benefits of currency unions among countries that differ in size, specialization, and ability to commit to time-consistent policies. As in other models, unions are more likely to form among countries that are geographically and culturally close, trade a lot, and have positively correlated price and output shocks; moreover, consistent with empirical findings, unions will

[2] For example, Eichengreen (1997) argues that fluctuations in European economies make them less qualified to be an optimal currency area than the United States, although Frankel and Rose (1998) point out that monetary integration may have caused the economies of U.S. states to become more economically integrated. Note, however, that not every one thinks the U.S. is an optimal currency area (Ghosh and Wolf 1994).

[3] In this regard, several countries undertook monetary reforms in the 1990s that likely made an important contribution to bringing inflation rates down (U.K., Canada, New Zealand). See Bernanke and Mishkin (1997) and Bernanke et al (1999).

[4] See Cukierman (1992) for classic discussion. However, see IMF (2001) for discussion of 1990s improvements in inflation performance in emerging market economies.

tend to increase the volume of trade among member countries (Rose 2000, Frankel and Rose 2002). Also, ceteris paribus, smaller countries will find it more advantageous to join currency unions, because for them reducing trading costs and improving economic integration will be especially important for realizing economies of scale.

With respect to credibility, countries that are unable to commit to time-consistent policies may find it beneficial to anchor their currencies to that of a large low-inflation country. If the anchor country conducts monetary policy with respect to its own fluctuations only, then the cost to the client country of acquiring credibility in this way will be the lost opportunity to tailor monetary policy to the country's own circumstances. This cost will be smaller if the client's shocks are correlated with those of the anchor, as the latter's policies will be somewhat appropriate to the former; if countries that are geographically close are more likely to experience similar shocks, countries would be expected to seek anchor countries relatively close to themselves. However, the client may be able to get the anchor to consider the client's shocks in formulating policy, by offering to transfer to the anchor some of the seigniorage from their use of the anchor's currency. In fact, at present the U.S. neither returns seigniorage revenues to countries using the dollar, nor factors their stabilization into monetary policy; we return to this issue below.

An implication of the model is that, as the number of countries increases, their average size decreases, and the volume of international transactions rises, which would tend to increase the desirability of currency unions. Thus, Alesina and Barro predict that "in a world of small and highly integrated countries, where the benefits of low and stable inflation are highly valued, one should observe a collapse of the one-country, one-money identity –- and a move toward a world with relatively few currencies" (p. 411).

Empirical patterns of currency adoption across countries are strongly consistent with the predictions of the Alesina-Barro model. As shown in Table 1, some 24 percent of countries, principalities, territories, and other places had a currency with an important link to the U.S. dollar in 2002, including using it for legal tender, having a dollar-based currency board, or having a fixed peg to the dollar alone. Consistent with the model's prediction, most places other than the U.S. that use the dollar or hard-peg to it are mostly very small.[5] Because the U.S. economy is so large, places with dollar-linked currencies account for a sizable share of world output: almost 25% without China, which has pegged its currency to the U.S. dollar since 1994, or 37% if China is included. To some extent, this share nonetheless understates the

[5] See the Appendix table for a list of the countries and places in each category.

dollar's importance because of its role in international financial markets, as will be discussed below.

Some 28 percent of places currently use the euro, have a tight link to it, or are likely to adopt it in the next wave of EU accession. The EU countries clearly have many characteristics of countries expected to benefit from monetary integration: they are geographically close, had substantial trade between them, and experience relatively similar price and output shocks.[6] For some EU members, especially those that traditionally had higher rates of inflation, an appeal of the euro was its likelihood of carrying on the highly credible policies of the German Bundesbank. In this regard, it is notable that the U.K. has opted at present not to adopt the euro, likely in part because the 1990s rise in its own policy credibility reduced the gains to be had through linkage to 'hard money.'[7] On the other hand, this 'hard money' aspect is clearly important for the 47 countries and places presently in the 'euro-fringe': the accession countries, CFA franc countries, former Yugoslav republics, and small principalities. These countries' economies are generally small and open, and some have had difficulties with policy credibility.[8]

Still, about half of all places, representing about 40% of total world output, have a sovereign currency, including Japan, India, and Brazil which together account for 16 percent of world output. But even in the sovereign-currency countries, the one-country-one-money paradigm is to some extent breaking down. Especially in countries that have had ongoing problems with inflation –- in Latin America, Turkey, and countries of the former Soviet Union -- and where restrictions on holding foreign-currency accounts have been lifted, businesses and citizens have often moved to substitute major international currencies for unreliable domestic money. This substitution has been substantial in some countries: for example, of the 107 countries with sovereign currencies outside of the dollar and euro zones, in 22 countries foreign-currency accounts at domestic institutions represented more than 50 percent of total deposits in 2001.[9] Such heavily dollarized countries are relatively small, accounting for 3 percent of world output and 5.5 percent of world population, though they make up 10% of all countries and places. Still, given the prevalence of dollarization, as well as evidence that once it occurs it tends to

[6] Although see footnote 2 above.
[7] See also Buiter (2000) on this point. Mervyn King (2002) discusses the U.K. experience.
[8] Compared to other African countries, the CFA franc countries have maintained very low inflation rates, in good part due to their currency-union arrangement and longstanding hard peg to the French currency. See Boughton (1992) and Stasavage (1997).
[9] Estimates of foreign currency deposits are given in Honohan, Ize, and De Nicolo (2003).

persist over time, widespread use of major international currencies outside of their home countries seems unlikely to reverse any time soon.[10]

The current international monetary system

For many critics of the current monetary configuration, the question is not what an individual country should do *given* the general parameters of the world monetary system, but rather whether that system works as well as it could or should. While monetary arrangements evolved considerably over the course of the 20th century (Eichengreen 1998), they settled into a system whereby the U.S. dollar is a central anchor for international trade and finance; the major world currencies float against the dollar and against one another; and other currencies either attach themselves in some way to these currencies or themselves float.

Figures 1-3 illustrate the importance of the U.S. dollar, and increasingly the euro, in the conduct of international trade and finance. Most international reserves are held in major currencies, in good part because of their high liquidity; as shown in Figure 1, in the 1993-2002 period, about 80 percent of official foreign exchange reserves were held in U.S. dollars or 'euro currency', by which we mean euro-legacy currencies until 1999 and the euro thereafter. [Note that the trend over time cannot be directly interpreted, because external reserves of EMU member countries held in legacy currencies became domestic reserves when the euro was introduced]. The dollar is also heavily used as a means of effecting payments in international trade, of which an indication is that dollars passed hands in 80-90 percent of all transactions in foreign-exchange markets (Figure 2). There is a strong tendency to invoice trade in dollar terms, especially for undifferentiated goods like primary commodities; also, most trade between developed and developing countries is invoiced in dollars, euros, or another developed-country currency.[11] Finally, as shown in Figure 3, the vast majority of net issuance of international debt securities --- over 80 percent in recent years -- has been denominated in the U.S. dollar or the euro, with the role of the euro apparently increasing over time.

[10] See Kamin and Ericsson (2003) for analysis of dollarization in post-hyperinflationary Argentina, and Uribe (1997) for an illuminating model of hysteresis in foreign-currency use.
[11] Quoting prices in a single currency is especially time saving for primary commodities, which are relatively undifferentiated and although they are produced in many places, they trade in just a few (London, New York, Chicago). Bacchetta and van Wincoop (2002) show that exporters of undifferentiated goods sold in competitive markets are unlikely to be able to price in their own currency. Some theoretical work demonstrates that denominating trade and capital flows in a strong currency will be valued by risk averse agents: although in general agents would prefer to invoice in their own currency, Magee and Rao (1980) show that exporters from high-inflation countries will prefer to invoice in a low-inflation currency, since the latter acts as a hedge against uncertain domestic inflation (see also Tavlas 1997).

Since the breakdown of the Bretton Woods system in the early 1970s, analysts have been calling attention to instabilities and inefficiencies in international monetary arrangements and predicting that, sooner or later, in crisis or gradually, the dollar will move out of its central role in international trade and finance. The resilience of the system to date, however, suggests that it has stabilities and efficiencies as well as opposite elements. In terms of why the U.S. dollar would emerge as the primary medium of exchange in international transactions, Krugman (1980) traces its role to efficiency: if the transactions costs of using a given currency decline as the volume of transactions rises, then currencies of countries with relatively large shares of trade and capital flows will come to be heavily used in international functions of money. This dimension of transactions costs may also keep a country's currency in a central role even if its commercial importance begins to decline, due to economies of scale (e.g. the U.K. pound). In addition, a number of studies suggest that G3 economies may not have much to gain from coordinating monetary policies; for example, in an open-economy macro model of interactions between two large countries, Obstfeld and Rogoff (2002) show that, even when the countries' goods and financial markets are linked, the potential gains from setting monetary policy jointly will be small compared to the advantages of using independent monetary policy to offset country-specific shocks.[12]

Yet disadvantages of the present 'non-system' of a system are also clear. First, international currencies like the dollar occupy an unusual position in that they are supplied and managed with regard to national considerations, yet they also provide an anchor to the international monetary system that is of broader benefit. In this, international currencies have a certain 'public good' aspect: the world economy benefits from having a stable and credible anchor currency, and while the dominant economy captures some gains from this stability and credibility -- in terms of seigniorage[13] and in terms of expanding its prospects for trade and investment -- it may not promote this anchor function to the optimal degree because some of its benefits are external. While contradictions that may be present here have not been acute lately, this has not always been the case: for example, during the early 1980s, when soaring

[12] In a somewhat different model, Clarida, Gali and Gertler (2002) find that countries may gain from cooperation in monetary policy –- but they still should maintain flexible exchange rates. Note, however, that the debate about gains to G3 coordination is not settled (Canzoneri, Cumby and Diba 2002), and that debate remains active in the policy domain (Clarida 1999, Eichengreen 2000, pp. 32-36).

[13] Seigniorage revenues accruing to the U.S. are estimated to be small relative to U.S. GDP -- perhaps 0.3 percent (see Schuler 2000). In 1999, Senator Connie Mack (R-FL) proposed a scheme for revenue sharing whereby countries certified by the Treasury would receive rebates of 85 percent of the seigniorage calculated by a formula in the act -- the remaining 15 percent accruing to the U.S. to cover costs.

interest rates in the U.S. suddenly reversed capital flows to developing countries, causing the debt crisis.[14]

A second and related point concerns the volatility in exchange rates in excess of what would be warranted based on economic fundamentals (Meese and Rogoff 1983a, 1983b; Flood and Rose 1995). Whereas observers like Milton Friedman and Harry Johnson expected freely floating rates to stabilize markets for foreign exchange, volatility has not fallen and may even have increased (Obstfeld 1995, Clarida 1999).[15] Understanding implications of this volatility has proven to be difficult: although economic theory would lead us to expect that spurious volatility would be welfare reducing, the theoretical and empirical evidence on effects of volatility on such variables as trade, growth and capital flows turn out to be fairly mixed.[16] Broadly it can be said that, while problems of exchange-rate volatility may be second-order for the G3 economies, they pose greater problems for the developing world -- a consideration that is not insignificant, given that the latter produces over one-half of the world's output and is home to 80% of its population.[17] As Hau (2002) has found, volatility seems to be higher for developing countries, *ceteris paribus*, perhaps reflecting larger real and monetary shocks. A particular problem here is that, to borrow internationally, developing countries generally have to issue debt denominated in dollars or euros, rather than their own currencies, so that fluctuations in exchange rates may suddenly shift the burden of external debt relative to domestic output. This problem is not easily circumvented: inability to denominate debt in domestic currency seems to be inherent in the international financial system, rather than a

[14] Studies calling attention to effects of U.S. monetary policy on capital flows to developing countries include Calvo, Leiderman and Reinhart (1996), Goldstein and Turner (1996), and Kaminsky and Reinhart (1999).

[15] An important element of this volatility is that, whereas money prices of goods are sticky and adjust slowly to clear the goods market, nominal exchange rates are asset prices that adjust continually to clear the capital market. See Clarida (1999) for discussion of efforts to explain deviations in terms of asset markets, demand for national output, and productivity shocks; lots of short run fluctuations can be traced to the first. Evidence of fundamental determinants of exchanges rates is clearer at longer horizons (e.g. Mark 1995, Chinn and Meese 1995).

[16] Recently, for example, in a two-country general-equilibrium model, Baccheta and van Wincoop (2000) found ambiguous relationships between exchange-rate volatility and the level of trade -- but also, interestingly, that policy regimes resulting in high levels of trade are not necessarily those yielding high levels of welfare. Empirical evidence in this area is similarly mixed. Using a gravity model and panel data on bilateral trade for 186 countries from 1970 to 1990, Rose (2000) finds a large positive effect on trade of using the same currency and a negative though small effect of exchange-rate volatility. Yet many other studies find effects that are indeterminate or insignificant; see McKenzie (1999) and Taglioni (2002) for reviews of this research. Only a few studies in this area focus on or include developing countries. Cabellero and Corbo (1989) find a significant negative effect of real exchange-rate volatility on exports of Chile, Colombia, Peru, the Philippines, Thailand and Turkey.

[17] Figures from the World Bank's World Development Report, 2003.

fault of countries' economic policies or performance (Eichengreen and Hausmann 2003; Eichengreen, Hausmann, and Panizza 2003).

A final issue concerns two contrary dynamics present in the monetary system and what they might imply for its future. For one, the U.S. share of global output has fallen over time, from 40% after World War II to 22% presently. While this might be expected to erode the position of the dollar as the dominant international money, as Krugman (1980) explains, a currency can retain its central position even if its commercial importance declines, because of economies of scale in transactions costs. Still, such a currency is likely to lose its central position eventually: as declining trading volume leads to higher transactions costs, and higher transactions costs lead to lower trading volume, some shock can produce an abrupt shift in the payments structure. But at the same time, for reasons outlined by Alesina and Barro (2002), increased economic integration has tended to enhance the centrality of currencies of large countries with highly credible policies, since smaller countries and/or those having difficulties establishing credibility may increasingly favor strategies that tie their money to a major international one. To date, these latter forces seem to have offset any tendency toward slippage in the role of the dollar, and indeed the data show only a small erosion of the dollar's position in this respect (see Figures 1-3 and Hakkio 1993). But by the same reasoning, and reinforced by the deliberate European project of monetary integration, we can expect them to boost the international use of the euro.[18] Thus, while much remains to be determined here, the dynamics inherent in the present system seem to contain much potential for flux, with the continued supremacy of the dollar uncertain, and evolution away from the one-country-one-currency paradigm for monetary policy taking place in an appreciable subset of countries.

The possibility of a *world currency*

Some of the problems of the world monetary system can be tackled specifically; for example, in the 1930s Keynes proposed using a transactions tax to counter speculative financial flows -- an idea taken up by James Tobin in his well-known proposal "to throw some sand in the wheels of our excessively efficient international money market."[19] Still, such specific measures are often second-best solutions favored for their practicality; indeed Tobin himself viewed a world currency with supporting institutions as preferable to a tax, but recommends the latter due to the low odds of achieving the former.[20]

[18] See, for example, Bergsten (1997).
[19] Similarly, see Eichengreen and Hausmann (2003) for a proposal that would address developing countries' inability to borrow in their own currencies.
[20] See also Eichengreen, Tobin and Wyplosz (1995), Garber and Taylor (1995), Frankman (2002).

The possibility of a broad-based or global monetary system has been discussed numerous times over the years. Keynes advocated an "International Clearing Union" that would function as a world central bank, ensuring the stability and integrity of the international payments system and issuing a new monetary unit called the "bancor, unitas, dolphin, bezant, daric and heaven knows what" [23 May 1944, p. 10].[21] Recently several prominent economists have discussed ideas of moving towards world currencies. Robert Mundell (1995) has written that "The missing ingredient [in present international monetary arrangements] is a world currency, and until such a facility is created, the existing arrangements, while likely to continue, will be, at best, second best."[22] Robert Barro (1999) has advocated a rationalized dollar-based monetary system for the Western Hemisphere, urging us to 'let the dollar reign from Seattle to Santiago'. For developing countries, Jeffrey Sachs favors national currencies and floating exchange rates since, in his view, currency abandonment schemes are "more straightjacket than salvation" (Sachs and Larrain 1999). Paul Krugman (1999) sees the idea of currency consolidation an 'an intellectual fad,' saying instead that we should "let a hundred currencies bloom. Well, maybe 20 or 30." Milton Friedman (2001: 28) views the prospect of a single world money as a "monstrosity," based on his expectation that control over it would be vested in "a small group of unelected officials … who are not accountable in any meaningful way at the ballot box." [23]

In order to consider prospects for a world monetary system, it is useful to discuss a specific plausible scheme that accords well with contemporary thinking about optimal institutional arrangements for monetary-policy making -- in which the decision-making body is shielded in its operations from short-run political pressures, yet is also representative, accountable, and guided by public mandate (Mishkin 2000). Such a scheme was discussed by Harvard professor Richard Cooper, in a 1984 article in *Foreign Affairs.* Cooper's vision was decidedly long-term: He did not expect to see a world monetary system within the next 25 years, but thought its time would come eventually: just as the U.S. Federal Reserve System "blended quite separate regions of the country, and banks subject to diverse state banking jurisdictions, into a single system, paralleling the increasingly national financial market, … [s]imilarly, we will need a world monetary system that parallels the increasingly global financial market" (Cooper 1984: 177).

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[21] Keynes' proposal was not that the bancor should replace national currencies, but rather that it should serve as the monetary instrument in international transactions. See Williamson (1987) and Mundell (1995).

[22] See also Mundell's (2001) debate with Friedman on this and other subjects.

[23] In contrast, however, Frankman (2002) argues that "a global currency … is a necessary component in the shaping of a global democracy, which will restore scope for diversity to the world's constitution parts."

In effect, the system would be like a broad-based currency union: it would be neither feasible nor desirable to force countries to join, but a system centered around an 'inner club' of advanced-industrial economies would likely attract a growing pool of members, as countries sought to benefit from the closer trade and financial relationships that could arise in a broad-based monetary union.[24] In this sense, although Cooper acknowledged that his proposal might be viewed as 'radical' or 'utopian,' in fact it looks rather a lot like the contemporary broad euro zone, with its 'inner club' of Germany, France, and other EU-15 countries, an eager fringe of applicant countries, and those who 'came in through the back door' via longstanding pegs to predecessor currencies. The EU also looks like Cooper's idea insofar as he argued that benefits of monetary integration are best accompanied by free trade.

At the center of the system would be a supranational monetary authority responsible for issuing currency and directing monetary policy. The currency could be the U.S. dollar or a newly-crafted money: "It could be anything that is agreed, since money is above all a social convention" (p. 183). The decision-making body of the monetary authority would consist of representatives of participating countries and would be held accountable to their governments. Cooper proposed that voting power on the board would be proportionate to GDP, periodically re-weighted to reflect shifts in economic importance. Other arrangements are of course possible. In Keynes' (1987[1943]) proposal for an International Clearing Union, he envisioned "the management of the institution [being] genuinely international, without preponderant power of veto or enforcement to any country or group; and the rights and privileges of the smaller countries must be safeguarded." In the European Central Bank, each national central bank governor has a vote in the decisions of the ECB's Governing Council, along with the six members of its Executive Board, with the rationale being that:

> "A system of weighted voting as in the Council of Ministers -- or on the executive board of the IMF, including rules for blocking votes by minorities -- would have fostered the thinking that the governors were just national representatives and not equal members of a collegiate body charged with formulating a common policy" (Thygesen 1990: 10-11).[25]

The monetary authority would have the core mandates of a central bank -- preserving macroeconomic stability and mitigating liquidity problems by acting as lender of last resort -- although its specific goals and priorities would have to be negotiated and defined in its set-

[24] In Keynes' (1987[1943]: 153) proposal for an International Clearing Union, he imagined that all countries belonging to the United Nations would be invited to become original members of the Union, with other countries possibly invited to join subsequently.
[25] Cited in Bindseil (2001), who provides a game-theoretic analysis of this arrangement.

up.[26] As with national central banks, it could carry out its mandate using open-market operations and rediscounting. Seigniorage could be automatically redistributed to governments, with profits periodically returned to them in proportion to voting shares.[27] As in the U.S. Federal Reserve through the 20th century, it would not be necessary to harmonize bank legislation and regulation completely across jurisdictions, although there would be a need for basic minimum standards.

For developing countries, the issue of losing opportunities for independent monetary policy would become less important in a broad-based currency union: for them, expanding membership would alleviate the need to use domestic monetary policy to maintain external competitiveness in the face of shocks to other exchange rates. For example, in a model representative of the Mexican economy, Spiegel and Valderrama (2003) find that independent policy may or may not dominate a dollar-oriented currency-board arrangement if the only shocks to the economy are supply-side -- but independent policy definitely dominates a currency board arrangement if there are also shocks to the euro/dollar rate.[28] The other issue here concerns whether flows of productive resources across borders are sufficiently unconstrained so that adjustments to shocks can take place in ways other than re-setting the country's entire set of relative prices. Thus, for example, there was never any suggestion that Texas should go off the U.S. dollar to cope with the 1980s decline in world oil prices: although it faced a tremendous shock to its terms-of-trade, we expected capital and labor to flow out of oil into other sectors, and real estate markets to slump, but also that market forces would steer resources into alternative uses (albeit perhaps not as quickly as one might like, and with financial disruptions). As in Europe, a broad-based currency union makes the most sense among areas that have lots of trade and investment already and within which flows of labor and capital are relatively free. In this sense, the 1990s increase in international trade and

[26] In the terminology of Fischer and Debelle (1994), the monetary authority should be "goal dependent" but "instrument independent." See also Mishkin (2000).
[27] For the euro zone, under Article 32 of the Statute of the European System of Central Banks, the sum of the participating national central banks' monetary income is allocated to the individual national banks in proportion to their paid-up shares in the capital of the European Central Bank. Bogetic (2000) discusses arrangements for sharing seigniorage across national borders.
[28] Similarly, movements in the dollar/yen exchange rate are said to have contributed to the Asian financial crisis, and Argentina's currency-board arrangement came under great pressure after Brazil, its largest trading partner, devalued its currency against the dollar. There is also a finding from Frankel, Schmukler and Servén (2002) that only large industrial countries seem to be able to use monetary policy as a countercyclical device –- as well as the observation of Dornbush (2000) that globalizing capital markets generally prevent emerging-market countries from achieving interest rates out of line with those in New York or Frankfurt, with country-specific risk premia tacked on.

investment move in this direction, though facilitating labor mobility would also be important in this respect.

An additional aspect of a broad-based or global monetary system that is quite different from unilateral adoptions of major international currencies is that, in the dollarization option the lender-of-last-resort function is in some sense truly surrendered, but in a global system there would still be a lender-of-last resort – the supranational authority. Here the lender-of-last-resource function may become more difficult to use, since decisions would probably reflect perceived benefits to the stability of the system as a whole, not necessarily that of a single member nation. Yet this is beneficial, insofar as it narrows the scope for moral hazard not by eliminating the safety net, but rather by making it harder to use. Of course, as Cooper (1987) notes, possibilities would remain for defaults by banks or governments; what adoption of a global currency would do is "eliminate the potential for a country to deal with financial problems by devaluing, that is, by engineering a partial and perhaps concealed default on domestically denominated debts of government or banks." But anyway, as Barro (1999) argues, use of a global currency would take away an important source of crises for which this function is critical -- those relating to actual and potential devaluations of the currency. The trick of course is how to set up the rules for using lender-of-last resort functions so as to minimize moral hazard and possibilities of abuse.

Practicalities

Of course, there would be daunting practicalities associated with developing policies and institutions to govern a world money: As the project of European monetary integration demonstrated, it may easily take a decade to prepare for orderly change to a system of unified currency, and even that after several decades of movement towards political, economic, and financial integration. Moreover, in the design of a broad-based monetary system, there could be important differences across countries in such key considerations as preferences over inflation/output stabilization, distribution of voting rights, mechanisms for distributing seigniorage, provisions for a lender of last resort, etc. The experience of negotiations over free trade comes to mind here, where shared commitment to the principle has not been sufficient to promote timely progress in the design and implementation of its practical steps.

These are real and valid concerns and point to the fact that currency integration on any sort of global scale would be a long-term process. Yet there are two key reasons to doubt that problems are insurmountable. First, Europe has shown itself to be willing and able to take on the challenges of monetary integration within Europe, incorporating not only relatively similar

Western European countries but also the significantly different former socialist countries to the East. This project, assuming it continues along a sustainable path, will provide a model of monetary integration among diverse economies -- and may even, over time, come to constitute the nucleus of an even more broad-based monetary system.

Second, a reasonable number of developing countries would likely have favorable views towards participating in a rationalized broad currency area: many are moving toward linkages with major currencies anyway, and they could conceivably stand to gain from an arrangement in which some seigniorage is returned to their governments and the circumstances of their economies are factored in some way into policy decisions. Certainly, there is far more consensus than there was a decade ago about the benefits of monetary discipline, and with many countries having already undertaken reforms to enhance the credibility of policy, entrance into a broad-based system would be an additional step towards rationalized monetary policy, not at all a first one.

In the nearer term, the key practical consideration is a lack of immediate impetus for developing a global money: As much as the present 'non-system' of a monetary system is subject to complaints, there is not at present a sense that it contains flaws critical enough to warrant concerted effort to devise a broadly-based alternative; indeed, with the past 10-15 years of growth with price stability in the U.S, if anything, the extent of criticism about the dollar-centered system may even have declined.[29] This leaves the U.S. Treasury and Federal Reserve comfortable with a policy of 'benign neglect' toward international use of the dollar.[30] To be sure, some effort is devoted to ensuring that the perceived integrity of the dollar is maintained, for example, by re-designing bills to protect against counterfeiting (Lambert and Stanton 2001). And the Fed has at times adjusted interest rates with global financial implications in mind.[31] Still, there is no thought of altering monetary policy in some way that would systematically factor in the broader importance of the dollar. Thus, when asked in 1999 about Federal Reserve perspectives on use of the dollar in Latin America, Fed Chairman Alan Greenspan clarified the scope and priority of U.S. monetary policy as follows:

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[29] As Cooper put it in 1984: "[The dollar-centered system] has been accepted, more or less grudgingly, because it has worked reasonably well and there is no clear feasible alternative. But it leaves a deep sense of uneasiness around the world, even when the U.S. in the judgment of others is relatively well behaved; and the uneasiness grows dramatically when in such periods as 1970-71 and 1978 and 1981-82 the rest of the world, or parts of it, believe the U.S. is not well behaved" (p. 175).

[30] Former Treasury Secretary Robert Rubin described the U.S. stance towards international use of the dollar as 'agnostic' (Rohter 2000).

[31] For example, in explaining the interest-rate cut of September 1998, the minutes of the Federal Open Market Committee cited global economic effects of the Russian default and devaluation (http://www.federalreserve.gov/fomc/minutes/19980929.htm).

> Our … basic monetary policy does take into consideration what is going on in the rest of the world largely because the rest of the world does affect us; but what we do not do is focus on the well-being of the rest of the world as a whole as distinct from the well-being of the United States. To be sure, there is a close interrelationship between the two, but we would never put ourselves in a position where we envisaged actions that we would take would be of assistance to the rest of the world but to the detriment of the United States. [32]

Nonetheless, as the work of Krugman suggests, the declining relative importance of the U.S. in the world economy entails a risk that, just as the U.S. dollar replaced the British pound sterling, the dollar may in turn be replaced by something else. The question here is whether -- assuming that the current pace of economic and financial integration continues -- what replaces the dollar will not be a single country's currency, but rather some supranational money better adapted to the internationalization of production and exchange.

Concluding remarks

In summary, given the gains to be had from monetary arrangements that facilitate international integration, the world monetary system has been heading towards a situation in which there are "fewer monies" but "better monies," as Rudi Dornbush (2000) said. The question at stake in discussion of a world currency is whether, at some time or another, it would be worthwhile to rationalize patterns of the globalization of money, aiming to remove spurious, detrimental fluctuations in value associated with *intermediation* of economic activity, that nonetheless have real effects. Milton Friedman (e.g. 1968, 2001: 28) likes to quote John Stuart Mill in this regard:

> There cannot … be a more insignificant thing, in the economy of a society, than money; except in the character of a contrivance for sparing time and labour. It is a machine for doing quickly and commodiously, what would be done, though less quickly and commodiously, without it: and like many other kinds of machinery, it only causes a distinct and independent influence of its own when it gets out of order.

In this sense, what would be most desirable would be to foster in the international monetary domain the kind of price stability that Alan Greenspan has favored for the U.S. -- involving a rate of inflation that is sufficiently low so that households and businesses do not have to take it into account in making everyday decisions.

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[32] In the same venue, Former Treasury Secretary Larry Summers also expressed concerns that widespread formal adoption of the U.S. dollar would make other countries vent frustrations at the U.S. should their own economies turn down (Federal News Service 1999).

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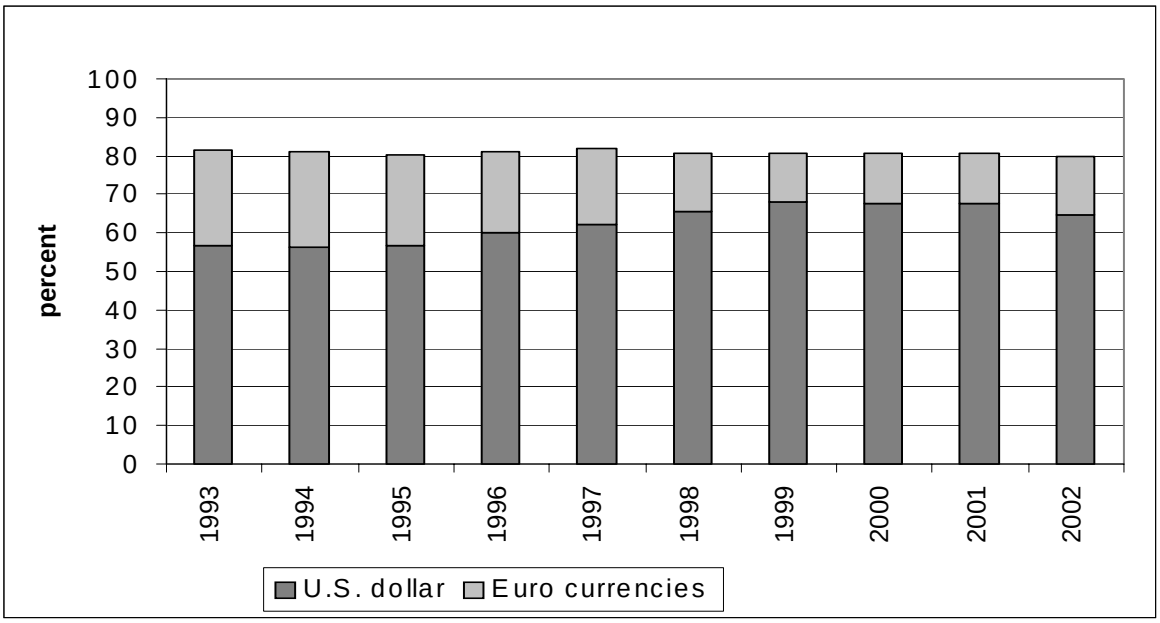
Table 1. **Monetary arrangements, as of year-end 2002**

	Countries and Places		Gross domestic product		Population	
	Number	Percent	Billions PPP $	Percent	Millions	Percent
U.S. dollar	52	23.7	17159	36.9	1944	31.6
U.S.	1	0.5	10138	21.8	288	4.7
Dollarized or hard peg	29	13.2	375	0.8	36	0.6
Other dollar pegs	22	10.0	6646	14.3	1620	26.3
China	(1)	(0.5)	(5732)	(12.3)	(1281)	(20.8)
Euro area	62	28.2	10974	23.6	640	10.4
Euro proper	12	5.5	7667	16.5	306	5.0
EU members not in ERM-I	3	1.4	1898	4.1	73	1.2
Accession countries	12	5.5	1072	2.3	105	1.7
Other euroized or hard peg	35	15.9	337	0.7	157	2.5
Sovereign currency without fixed peg to dollar or euro	106	39.3	18406	39.5	3569	58.0
Japan	1	0.5	3261	7.0	127	2.1
India	1	0.5	2695	5.8	1048	17.0
Brazil	1	0.5	1312	2.8	174	2.8
Other sovereign:	103	46.8	11138	23.9	2219	36.1
Foreign currency deposits > 30% of total deposits	22	10.0	1383	3.0	339	5.5
Other	81	36.8	9754	21.0	1880	30.6
TOTAL	220	100.0	46540	100.0	6154	100.0

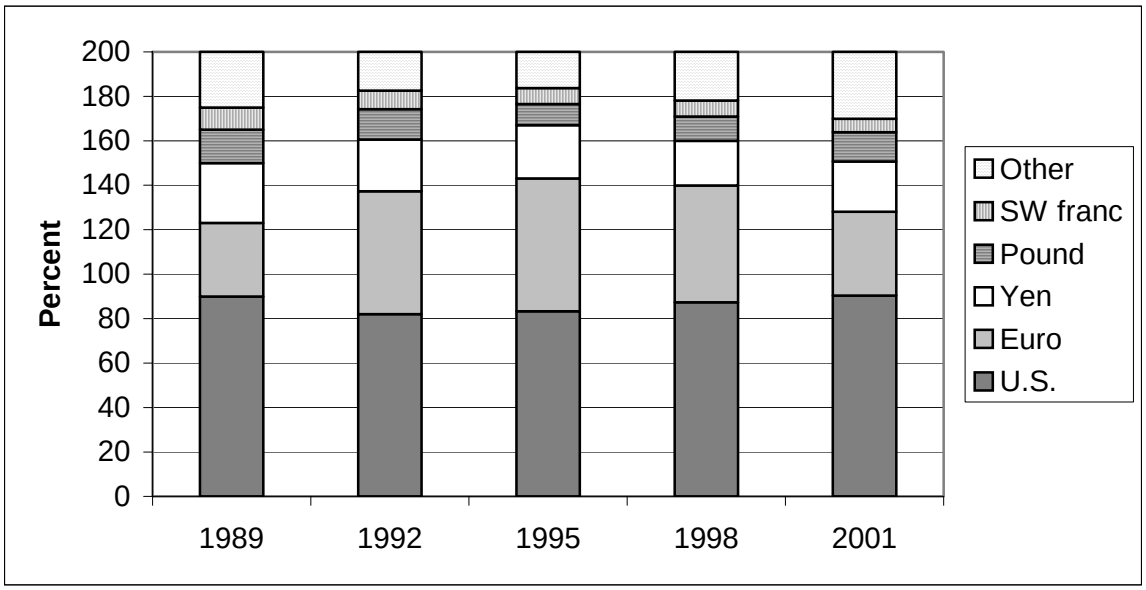
Notes and sources: See Appendix.

Figure 1. Official foreign-exchange reserves, by currency of holdings (percent of total)



Source: IMF (2003).

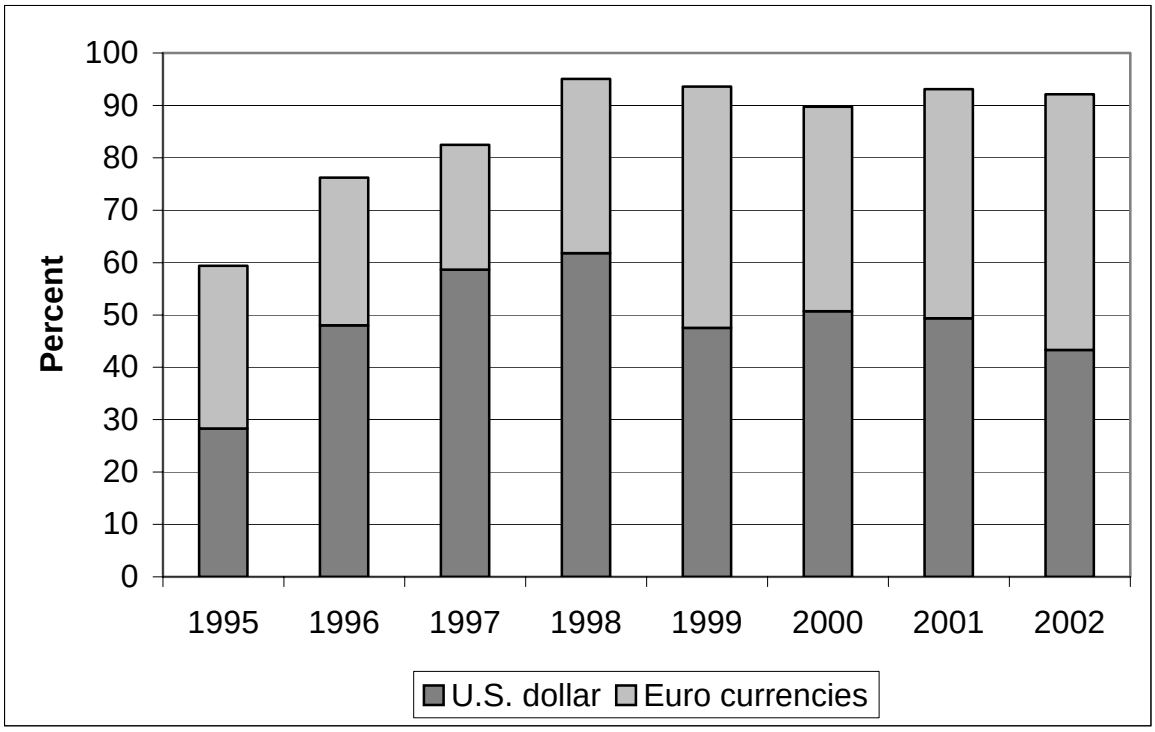
Figure 2. Currency distribution of foreign exchange transactions, percent



Source: Bank for International Settlements (2002).

Note: Because two currencies are involved in each transaction, the sum of the currencies' shares is 200, not 100.

Figure 3. Net issuance of international debt, by currency of issue (percent of total)



Source: Bank for International Settlements.

Appendix. Notes and sources to Table 1.

NOTES TO TABLE 1	
Monetary arrangements (as of year-end 2002)	**Countries and places:**
DOLLAR ZONE	
U.S.	United States
Other places using the U.S. dollar	British Virgin Islands, East Timor, Ecuador, El Salvador, Guam, Marshall Islands, Micronesia, N. Mariana Islands, Palau, Panama, Pitcairn Islands, Puerto Rico, Turks-Caicos Islands, U.S. Virgin Islands
Hard peg (currency-boards or board-like arrangements)	Bermuda, Cayman Islands, Djibouti, Hong Kong (+Macau), Eastern Caribbean Currency Union [Anguilla, Antigua and Barbuda, Dominica, Grenada, Monserrat, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines]
Other fixed peg to the U.S. dollar	Aruba, Bahamas, Bahrain, Barbados, Belize, Bermuda, Cayman Islands, Djibouti, Iran, Iraq, Liberia, Myanmar, Netherlands Antilles, Nigeria, Oman, Qatar, Saudi Arabia, Syria, Turkmenistan, United Arab Emirates
EURO ZONE	
Euro proper	12 EU members that adopted the Euro on 1 January 200x (Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain)
EU members not in ERM-I	Denmark [ERM-II], Sweden, United Kingdom
Accession countries	Bulgaria, Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, the Slovak Republic, Slovenia
Other places using the euro	Andorra, Monaco, San Marino, Vatican City
Hard peg	Currency boards: Croatia, Kosovo, Montenegro, Bosnia-Herzegovina CFA franc zone: Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Congo Republic, Cote d'Ivoire, Equatorial Guinea, Gabon, Guinea-Bissau, Mali, Niger, Senegal, Togo. Countries belong to one of two central banks; both have hard peg of 665.957 CFAF per euro (formerly 100 CFAF per FF), backed by the French Treasury. Other longstanding fixed pegs: Comoros, Falkland Islands, French Guiana, French Polynesia, Gibraltar, Guadeloupe, Martinique, Morocco, New Caledonia, Reunion, St. Helena, Wallis and Futuna Islands
	(Continued)

(CONTINUED)	
OTHER SOVEREIGN WITHOUT FIXED PEG TO DOLLAR OR EURO	Includes floats, managed floats, SDR pegs, multi-currency pegs, and indicator-based pegs
India	Includes Bhutan which has peg to rupee
Foreign currency deposits > 50% of total deposits in 2001, according to Honohan et al. (2003)	Angola, Argentina, Armenia, Azerbaijan, Belarus, Bolivia, Cambodia, Congo/Zaire, Georgia, Kazakhstan, Kyrgystan, Lao PR, Lebanon, Macedonia, Mozambique, Nicaragua, Paraguay, Peru, Tajikistan, Turkey, Uruguay, Yemen
SDR pegs	Libya, Rwanda, Seychelles
Other sovereign	Afghanistan, Albania, Algeria, Australia, Bangladesh, Botswana, Burundi, Canada, Cape Verde, Chile, Colombia, Costa Rica, Dominican Republic, Egypt, Eritrea, Ethiopia, Fiji, Gambia, Ghana, Guatemala, Guinea, Guyana, Haiti, Honduras, Iceland, Indonesia, Israel, Jamaica, Jordan, Kenya, Korea, Kuwait, Madagascar, Malawi, Malaysia, Maldives, Malta, Mauritania, Mauritius, Mexico, Moldova, Mongolia, Nepal, New Zealand, Norway, Pakistan, Papua New Guinea, Philippines, Russia, Sao Tome and Principe, Sierra Leone, Singapore (to which Brunei is pegged), Solomon Islands, South Africa (which exchanges at parity with Lesotho, Namibia, and Swaziland), Sri Lanka, Sudan, Surinam, Switzerland, Taiwan, Tanzania, Thailand, Tonga, Trinidad and Tobago, Tunisia, Uganda, Ukraine, Uzbekistan, Vanuatu, Venezuela, Vietnam, Zambia, Zimbabwe
Other items	**Definition**
b. GDP in PPP $	Gross Domestic Product, in billions of U.S. dollars adjusted for purchasing power parity, in 2002.
Population	Millions, in 2002.
SOURCES FOR TABLE 1	
Item	**Source(s):**
Monetary arrangements	IMF (2002), Schuler (2000), Antweiler (2002), with additional information and updates from Central Bank websites and Lexis/Nexis news sources
Foreign currency deposits	Includes deposits in accounts based on currencies other than that of the country, primarily U.S. dollars and (then) German marks. Estimates from Honohan, Ize and De Nicolo (2003).
GDP and population	World Bank, World Development Indicators database, July 2003