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The Economics of Exchange Rates and the Dollarization Debate

The Case Against Extremes

The 1990s was a decade of global boom and bust, and exchange rates emerged as a key economic variable. In the early part of the decade, developing countries were encouraged to adopt fixed exchange rates that were seen as providing a nominal anchor to the domestic price level that could enforce monetary policy discipline and ensure low inflation. With most economists maintaining that the equilibrium level of economic activity is neutral with regard to systematic monetary and exchange-rate policy, countries were viewed as giving up little by adopting nominal anchor policies restricting monetary policy and tying down the exchange rate.

Many East Asian economies fixed their exchange rates at undervalued real parities, thereby fostering exports and contributing to the Asian growth miracle. In Latin America, Brazil adopted a fixed exchange rate as part of a nominal anchor strategy combating high inflation. Argentina, with its historically poor inflation performance, went the furthest down the fixed exchange-rate path by adopting a dollar-based currency board. This involved pegging the peso to the dollar and tying the supply of monetary base to dollar reserves.

The adoption of these policies coincided with faster economic growth and significantly reduced inflation, particularly in Brazil and Argentina. However, this good performance crumbled in the latter part of the de-

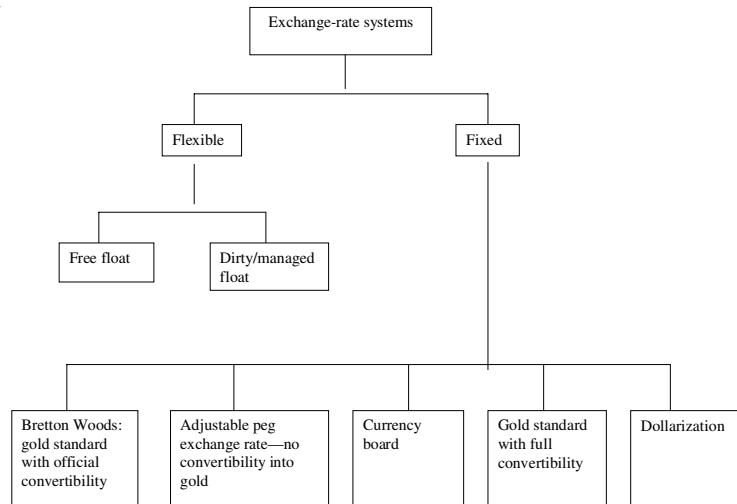
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cade. East Asia was hit by financial crisis in 1997 that generated a massive real economic contraction and forced large exchange-rate devaluations. Brazil was hit by financial crisis in 1999 and again in 2000 and was forced to abandon its fixed exchange rate. And, Argentina was forced to abandon its currency board and move to a floating exchange rate in 2001. In each case, the fixed exchange-rate arrangement figured prominently in the crisis, with country monetary authorities unable to defend the exchange rate in the face of capital flight.

This pattern of boom–bust associated with initial implementation of a fixed exchange rate and subsequent abandonment, has generated extensive debate. One side argues that fixed exchange rates expose countries to stagnation and financial crises, while the other argues that the financial crises occurred because exchange rates were not sufficiently fixed. For the former, floating exchange rates or some form of managed exchange rate (“dirty float”) represent the solution. For the latter, dollarization—the unilateral adoption by a country of the dollar (or some other major currency) as its medium of exchange and unit account—represents the solution.

This paper explores the economics of this debate. It is critical of the mainstream debate over choice of exchange-rate regime that has been conducted with little attention to the issue of capital mobility (see, for instance, Chang and Velasco 2000; Frankel 1999). Capital mobility impacts critically exchange-rate regime performance, and choice of exchange-rate regime and degree of capital mobility must, therefore, be viewed as a compound policy choice. The author is also critical of the “hollowing out” thesis (Eichengreen 1994, 1998) that asserts that countries must choose between pure floating and extreme fixed-exchange-rate regimes. Hollowing out is predicated on the claim that capital flows cannot be managed, while support for pure floating and extreme fixed exchange rates both reflect a market fundamentalist perspective. In the former, currency markets operate efficiently and need no management; in the latter, the equilibrium level of economic activity is neutral with respect to money, so that the loss of monetary policy and an exchange rate is of little consequence. Finally, the author is critical of existing analyses of dollarization that pay inadequate heed to dynamic deflationary implications. At the policy level, the argument is made that policy makers should avoid the extremes and choose the middle, which means managed exchange rates and rules managing capital flows.

Figure 1. Taxonomy of Different Systems of Exchange Rates



Dollarization as Part of the Fixed Versus Floating Exchange Rate Debate

Much of the recent debate over exchange rates has been framed by reference to dollarization, which can be viewed as an extreme form of fixed exchange rate. As such, the case for and against dollarization can, in part, be understood in terms of the costs and benefits of fixed versus flexible exchange rates. Figure 1 provides a taxonomy of the competing forms of exchange rate that can be divided into fixed and flexible exchange rates. Fixed and flexible exchange rates, in turn, subdivide into different forms, with dollarization being a member of the family of fixed exchange rates.

In systems of flexible exchange rates, the exchange rate is determined by demand and supply for currencies. In a free float system, the central bank never intervenes. In managed or dirty floats, the central bank may occasionally intervene by buying or selling currency. In fixed-exchange-rate systems, the rate of exchange is fixed and does not vary day to day; however, it can be periodically adjusted. The one exception is dollarization, where a country gives up its own national money and adopts the money of another country. In this, there is some resemblance to a currency union. However, under dollarization, the currency union is

Figure 2. Taxonomy of Exchange Rate and Capital Mobility Regimes

		Capital Mobility	
		Relative	Relative immobility
Exchange-rate regime	Fixed	Early	1950s 1960s
	Flexible	1980s, 1990s	1970s

unilateral, and the dollarizing country has no say over monetary policy, and it does not receive any currency seignorage. Additionally, in a currency union, the member countries must decide whether they want a fixed or floating exchange rate, whereas under dollarization, the country has no choice and implicitly adopts the exchange rate of the country from which its money is adopted.

The economics of exchange rates is usually constructed in terms of fixed versus flexible exchange rates. However, this construction overlooks the important role of capital mobility, which significantly influences exchange-rate regime performance. A high degree of capital mobility opens fixed exchange-rate regimes to speculative attack, while flexible exchange-rate regimes may come to be dominated by an asset market rather than trade balance considerations. This means that not only must policy makers choose between fixed and flexible exchange rates, they must also consider the extent of international capital mobility. This choice is captured in Figure 2, in which the taxonomy of exchange rate and capital mobility regimes is described, and the different regimes that have applied in different eras are shown. The early 1930s corresponded to an era of fixed exchange rates (the gold standard) with a high degree of capital mobility. The 1950s and 1960s corresponded to an era of fixed exchange rates (the Bretton Woods system) with relative immobility. In the 1970s, flexible exchange rates (dirty floating) were introduced, but capital mobility was still limited. In the 1980s and 1990s, industrialized countries adopted flexible exchange rates (dirty floating), and this was coupled with greatly increased capital mobility. Among developing countries, there was an increase in capital mobility, but the choice of exchange-rate regime fluctuated between dirty floating and fixed.

Flexible Exchange Rates

In a flexible system, the exchange rate is determined by market forces of demand and supply for a currency. Among economists, there is a generic presumption that markets are stable, and that the actions of agents as represented by demand and supply are based on rational decisions predicated on “economic fundamentals,”¹ and that market economies (i.e., the full network of individual markets that make up the economy) have a propensity to adjust smoothly and rapidly to full employment equilibrium in the absence of market impediments (i.e., inappropriate regulations and restrictions on price adjustment). This generic presumption predisposes economists to look favorably on flexible exchange rates.

The principle advantage of flexible exchange rates concerns their ability to insulate and stabilize economic activity. With regard to external shocks, the exchange rate can adjust to maintain trade balance. Thus, if export demand declines, the exchange rate can depreciate to lower export prices and restore demand. In effect, the external sector can be balanced by adjusting one price (the exchange rate) rather than adjusting thousands of prices, which would be necessary if restoring balance through downward aggregate price and nominal wage adjustment<<AU: OK as marked?>>. In addition, a flexible exchange rate can help in the adjustment to internal demand shocks. Thus, a domestic boom will tend to raise domestic interest rates, thereby attracting financial inflows and driving up the exchange rate. This appreciation will tend to reduce export demand and switch consumption away from domestically produced goods to imports, thereby reducing aggregate demand and cooling the boom.

A second major advantage of flexible exchange rates is that they strengthen the power of monetary policy, which can be used to ensure domestic economic balance. Thus, in recession, the monetary authority can lower interest rates, thereby causing financial capital to exit, which depreciates the exchange rate and stimulates net exports.

Balanced against these advantages are some disadvantages. First, flexible exchange rates imply exchange-rate uncertainty that raises the cost of international trade to the extent that firms hedge this uncertainty. The greater the volatility of exchange rates, the greater the uncertainty and cost. Perhaps even more important is that exchange-rate uncertainty may cause firms to diversify sources of production internationally to protect against exchange-rate changes that can adversely affect their costs and

competitive positions. This hedge-driven diversification is inefficient, being driven by uncertainty rather than production efficiency concerns. Moreover, firms may end up with overall excess capacity that they are willing to carry as a hedge against exchange-rate exposure. This raises costs. Additionally, to the extent that internationally diversified production increases firms' bargaining power with labor, the distribution of income may be tilted away from wages to profits. Volatile flexible exchange rates may, thereby, have contributed to the adverse income distribution outcomes associated with globalization.

A second problem with flexible exchange rates relates to the issue of capital mobility. In the absence of capital mobility, demand and supply in exchange markets will reflect the balance of trade. Countries running surpluses will experience excess demand for their currency, as their trading partners seek to obtain currency to pay for imports, and this will cause the surplus country currency to appreciate. Conversely, currencies of deficit countries will tend to depreciate, as they sell their currency to get surplus country currency. This is the double-entry logic of market exchange. Every purchase is matched by an offer of exchange. In currency markets, the match is one currency for another. If the Marshall–Lerner elasticity conditions are met, the depreciation of the deficit country's exchange rate will tend, over time (after J-curve effects have worked through), to restore trade balance, which will then cause its currency to stop depreciating. Under such conditions, the foreign exchange market is stable.

However, given capital mobility, demand and supply in exchange markets will reflect more than just trade balance considerations. They will also reflect asset portfolio considerations and decisions to hold wealth across different national financial markets. This brings an asset market dimension to foreign exchange markets that can be highly problematic. In particular, currency markets will take on the character of asset markets. As such, they may be volatile and subject to speculative manias and herd behaviors. This opens the way for asset market volatility to impact exchange rates and, thereby, impact output and employment. Thus, as financial investors move money into a country, they will appreciate the exchange rate. This can make industries uncompetitive, resulting in plant closures and job losses despite the absence of any change in factory floor productivity. Capital inflows will also drive up asset prices and lower interest rates, thereby promoting asset-centered booms and distorting the allocation of resources.

In the event that the inflows reverse, the result can be a collapse in asset prices and a rise in interest rates, as happened in East Asia in 1997. Flexible exchange rates plus unrestricted capital mobility can, therefore, make a volatile cocktail.²

Fixed Exchange Rates

In a system of fixed exchange rates, the exchange rate is fixed at an official predetermined rate. The central bank acts as a market maker and steps in to fill any imbalance between demand and supply. Such a system has two major advantages. The first is that fixed exchange rates imply reduced uncertainty, and this helps reduce the costs of international trade transactions. The second is that fixed exchange rates act as to discipline monetary authorities, preventing them from pursuing inflationary policies. This argument was emphasized when Brazil and Argentina adopted fixed-exchange-rate-based arrangements in the 1990s. The logic is that excessive money supply expansion generates inflation that, in turn, gives agents an incentive to shift into currencies with purchasing power that is not being eroded. Such shifts force the central bank to intervene and buy the currency to protect the exchange rate, thereby reducing the money supply. In this fashion, fixed exchange rates establish an automatic mechanism that prevents central banks from excessive money supply expansion, and central banks are forced to tighten the money supply whenever inflation starts to increase to levels that will spur currency flight. This mechanism is referred to as a nominal anchor, with the exchange rate serving to anchor the price level. In countries with histories of excessive inflation and where central banks have lost credibility with financial markets, it is argued that employing a fixed-exchange-rate nominal anchor is a good way to win back credibility. Moreover, the costs of such commitment are small if monetary policy is viewed as being unable to systematically impact equilibrium real interest rates and the equilibrium level of real economic activity.³

Balanced against these advantages are several disadvantages. First, by committing to a fixed exchange rate, a country gives up having the exchange rate as a shock absorber that helps insulate against external economic shocks. Second, the fixed exchange rate limits the ability to use domestic monetary policy to stabilize the economy, but, as noted above, this loss can be beneficial in cases where monetary authorities have a credibility problem due to past high inflation.

Third, the nature of the adjustment process under fixed exchange rates may have a significant deflationary bias. Abstracting from capital flows, countries with trade surpluses will experience an excess demand for their currencies, while countries with trade deficits will experience an excess supply of their currencies. If a deficit country is forced to keep buying its currency to defend the exchange rate, this leads to domestic monetary contraction in the deficit country, while the money supply of the surplus country increases due to the selling of foreign reserves by the deficit country. The classical macroeconomic assumption is that reductions in the money supply cause prices to decline but have no impact on output. This is the “neutrality of money proposition,” whereby output and employment are determined by real economic factors (tastes, resources, and productive technology) and not by the amount of circulating paper (i.e., money).⁴ Applied to the global economy with fixed exchange rates, these money supply changes cause prices to fall in the deficit country and rise in the surplus country, thereby altering relative competitiveness and eliminating the trade deficit.⁵ However, such global monetarist reasoning is contested by Keynesian analysis that argues that monetary contraction induces real output contraction that is worsened by price deflation due to debt effects. The net result is that the adjustment process under fixed exchange rates causes domestic output contraction that ricochets back into the international economy, as falling domestic income causes reduced imports, in turn, reducing aggregate demand and income in other countries.⁶

One possible way to avoid this contractionary outcome is to require the surplus country to defend its currency and prevent it from appreciating, rather than require the deficit country to do the defending. In this case, the system is prone to an expansionary bias, because the surplus country increases its money supply to prevent appreciation. However, this arrangement removes the discipline of fixed exchange rates on central banks. A second option for reducing contractionary bias is to have periodic discrete adjustments of the fixed exchange rate to eliminate fundamental trade imbalances. This was the Bretton Woods approach. However, it also removes (or at least significantly weakens) the discipline of fixed exchange rates on central banks. Additionally, it does away with the certainty of fixed exchange rates and invites market speculation aimed at anticipating or forcing a devaluation.

One claimed advantage of fixed exchange rates is that they reduce

price uncertainty, which is good for international trade. However, introducing international capital mobility into a system of fixed exchange rates dramatically changes this conclusion. As noted earlier, capital mobility introduces portfolio and wealth allocation concerns that impact currency markets. Most importantly, capital mobility introduces financial market behaviors of speculation and herding into currency markets. These behaviors can render a fixed exchange-rate system financially fragile. If a country has a persistent trade deficit, the central bank will be obliged to intervene to defend the exchange rate. Given finite holdings of foreign reserves, market participants will recognize that the central bank will eventually run out of foreign reserves with which to conduct this defense. At this stage, market participants may start selling to get out before the central bank runs out of reserves and is forced to devalue. As a result, the collapse can be brought forward in time, even when a central bank still has large reserve holdings. More importantly, speculators may begin to speculate against any currency they believe “subjectively” to be weak. In modern financial markets, speculators can raise enormous amounts of leverage that dwarf the foreign reserves of the central bank. Therefore, they can engage in a war of attrition that they can win as long as the central bank with weak currency is the one forced to defend the exchange rate.⁷ In effect, fixed exchange rates offer speculators a form of “one-way” option. If they speculate and win, they reap the huge reward of devaluation: if the central bank fights off the speculative attack, all they have lost are the transactions costs and interest for a short period, and these transaction costs are increasingly small due to technological innovations in electronic commerce. The upshot is that fixed exchange rates are fragile in a world with international capital mobility. This means that there is always a risk of speculatively induced collapse, and reducing that risk requires that countries hold large quantities of costly foreign reserves.

A final problem with fixed exchange rates concerns their impact on private-sector borrowing decisions, particularly in developing countries. Fixed exchange rates create a moral hazard, whereby agents think there is no currency risk associated with foreign currency borrowing. Agents, therefore, over-borrow foreign currency, and sudden collapses of the exchange rate can leave them saddled with huge debt burdens measured in domestic currency terms. At this stage, a country can be plunged into a cycle of debt deflation and economic contraction, as happened in East Asia and Argentina.

The Dollarization Debate

The hollowing out thesis has led some (Barro 1999; Hanke 2003) to propose dollarization as the solution to the exchange rate problem. As indicated in Figure 1, fixed exchange rates take a continuum of forms, and dollarization is the most extreme form. Understanding currency boards and the gold standard, which are less extreme forms of the fixed exchange rate, can help in understanding dollarization. Under a standard fixed exchange rate, governments commit to a particular exchange rate and promise to defend it with their foreign exchange reserves. However, no commitment is made regarding the level of foreign exchange reserve holdings. Under a currency board, governments make a promise to back every dollar of domestic money with a fixed fraction of foreign reserves. This is similar to the gold standard, under which domestic money is exchangeable into gold at a fixed price, and governments may tie their issuance of currency to their holdings of gold. At the maximum, the fraction of reserves backing a currency board can be 100%, with currency boards resembling 100% reserve banks (“safe” banks) that have been proposed by Tobin.⁸ “Safe” banks are intended to instill confidence in the domestic banking system without recourse to deposit insurance; currency boards are intended to instill confidence in a country’s money.

Dollarization takes currency boards one step further and eliminates domestic money. Thus, the dollar, or that currency chosen to replace domestic money, becomes the national unit of account and medium of exchange. Dollar bills replace domestic currency, and the dollar becomes the unit of account for all transactions and financial liabilities. Dollarization has three advantages. First, surrendering the ability to create money strengthens the ability of fixed exchange rates to guard against inflation. Second, by guarding against money supply-driven inflation, dollarization builds financial market confidence that promotes lower interest rates. In developing countries, this reduction results from elimination of the inflation premium and elimination of the country currency risk, because devaluation is no longer possible. Currency boards also provide these two benefits, but they are smaller, because a currency board can be abandoned, as shown in Argentina. In effect, dollarization raises the cost of exit, making it more credible and, thereby, potentially delivering greater interest rate reductions. Third, the permanent reduction of inflation can encourage the development of long-term domestic lending markets. Dollarization may, therefore, solve the “original sin”

problem that prevents countries from issuing long-term debt denominated in domestic currency—but, it does so by eliminating domestically issued money.

Dollarization and Monetary Policy

Balancing these advantages are several disadvantages. As a form of fixed exchange rate, dollarization suffers from the generic problems of fixed exchange rates. There are additional disadvantages. First, under fixed exchange rates, trade deficits tend to produce a decline in the money supply, as the central bank is forced to sell reserves to maintain the exchange rate. This produces a negative money multiplier effect that can be mitigated by sterilized interventions in which the monetary authority buys bonds and sells domestic money. This is not possible in a dollarized economy, because there is no domestic money. Instead, dollar reserves are transferred to foreign sellers, leading to abrupt monetary contraction. Dollarization, therefore, amplifies the deflationary bias inherent in fixed exchange-rate regimes that oblige deficit countries to defend the exchange rate.

Second, dollarized economies can be subject to speculative attack and prove to be brittle. If investors lose confidence and start shifting funds offshore, there will be an immediate decrease in the monetary base, causing an abrupt spike in interest rates. Such spikes can cause self-fulfilling financial collapses, as asset prices fall, and debt burdens rise. If the central bank has foreign lines of credit that give access to additional dollar reserves, this can help avoid a contraction, albeit at the cost of incurring foreign debt and large interest service costs. However, borrowing to defend the exchange rate can be unstable if the associated interest costs result in an unsupportable foreign debt burden.

The problem of interest rate spikes and financial crises is linked to the problem of bank runs. Fixed exchange-rate systems are subject to runs on the currency. With dollarization, the problem is slightly different, and runs take the form of transfers of money balances offshore. This is problematic for the domestic banking system and can contribute to bank runs. Under a standard fixed exchange rate, the monetary authority can act as lender of last resort and increase the supply of money in response to a domestic run. However, under dollarization, the supply of high-powered money is determined by dollars in circulation and a country's holdings of dollar reserves. This means the monetary author-

ity cannot simply provide currency in response to a private-sector bank run, rendering the domestic financial sector more fragile, because depositors know that there is no lender of last resort. This fragility raises the possibilities of default, contributing to a greater interest rate default risk premium that can conceivably outweigh the reduction in interest rates from lowered inflation and exchange risk premiums. As a result, dollarization could drive up domestic interest rates.

Last, due to the bank run problem, dollarization stands to give advantage to U.S. banks over domestic banks, because the former have access to dollar reserves via U.S. money markets and the Federal Reserve. This is problematic from a national economic development perspective.

Dollarization and Fiscal Policy

A further disadvantage of dollarization concerns government finances and seigniorage revenues. By eliminating governments' ability to create money and putting a lid on domestic inflation, dollarization eliminates governments' access to seigniorage. Inflation reduces the value of money, and in doing so, it forces agents to acquire additional money balances from government. They do so by supplying goods and services to government in return for money payments. This is an important way of financing government, especially in developing countries that lack the administrative mechanisms to raise taxes in other ways. Indeed, seigniorage can be the economically optimal way of raising tax revenue, both for administrative cost reasons, and because the demand for money may be inelastic at low levels of inflation. Yet, dollarization eliminates this source of finance. Even worse, the levying of seigniorage is transferred to the United States, which issues the dollars that circulate in a dollarized economy. Seigniorage is still collected from private agents, but rather than being paid to their government, it is transferred to a foreign government.

Operating a dollarized monetary system also imposes an interest burden. Developing countries are international borrowers and pay a significant interest rate premium. Under dollarization, they would need to obtain large amounts of dollars in the form of currency and bank reserves, which pay zero or low interest rates. These additional dollar reserves are needed to provide liquidity, and they impose a large interest cost.

Another problem concerns dollarization's impact on fiscal policy and the fragility of government finances. With a national money, govern-

ments can always monetize part of their deficits and domestic debts in the event of liquidity crises. Dollarization takes away this power, rendering national government fiscally equivalent to provincial government and, thereby, reducing government's ability to fight domestic recessions through monetized deficit spending. Instead, deficit spending stands to be constrained by the willingness of markets to finance it at a rate the market determines is appropriate. Governments will be unable to use money-financed fiscal policy to combat deep recessions, and the interest rate burden associated with countercyclical fiscal policy stands to rise considerably, because government will be subject to default, like a provincial government. Thus, not only does dollarization impact a country's ability to conduct monetary policy, it also impacts the ability to conduct fiscal policy.

Dollarization and Dynamic Deflationary Bias

The above drawbacks of dollarization focus on its institutional design and the limitations imposed on national economic stabilization policy. Another set of drawbacks concerns long-run dynamic implications. One issue is that of international competitiveness. Under standard fixed exchange-rate arrangements, this problem asserts itself because countries have different rates of productivity growth, and periodic exchange-rate adjustment is needed to prevent increasing loss of international competitiveness by countries with slower productivity growth. However, with this need comes the problem of speculation, because financial markets begin to speculate against weaker currencies. With dollarization, such periodic adjustments are impossible, and a country can become internationally uncompetitive as a result of cross-country differences in productivity growth and inflation rates. In addition, a country may become uncompetitive, because the dollar (or the currency it has adopted) appreciates against other countries' currencies.⁹ In this event, the only way to restore competitiveness is by the slow and difficult process of price and nominal wage deflation, but even this can be problematic due to the problem of debt–deflation instability.

This danger links to the issue of optimal currency unions. Because dollarization is a form of unilateral currency union—with the dollarizing country giving up its national money—it should, in part, be guided by optimal currency union considerations. A dollarizing country should choose the currency of a country with which it has similar rates of pro-

ductivity growth, a similarly synchronized business cycle, and with which it is a significant trading partner. In this case, the monetary policy of the country whose currency it is adopting will fit its own circumstance; absent that, monetary policy will be out of sync with economic conditions in the dollarizing country, causing economic dislocation. This is what happened with Argentina's dollar-based currency board in the 1990s. The United States had faster productivity growth and experienced a domestic boom that led to higher interest rates, which appreciated the dollar. As a result, interest rates rose for Argentina too, and Argentina lost international competitiveness, because the bulk of its trade was with Europe and South America rather than with the United States.

Another dynamic implication of dollarization relates to growth of the money supply. Because a dollarized country cannot create dollars, the only ways to grow the money supply are through trade surpluses and through attracting dollar capital inflows. A number of implications flow from this. First, having international competitive advantage in goods markets and being attractive to foreign capital becomes critical. Second, the inability to grow the money supply risks exposing dollarized economies to a future of higher unemployment and deflation. Accommodating real economic growth requires real money supply growth. The standard way of doing this is to grow the nominal money supply, holding prices constant. A mathematical alternative is to hold the nominal money supply constant and have prices fall (deflation). However, though classical macroeconomics asserts that deflation is neutral with respect to real output, it is now widely recognized that deflation has significant negative real effects in modern economies with inside bank money and credit. These negative effects have been made clear by Japan's recent experience with deflation, and they are also borne out by the experience of the Great Depression. There is a significant body of theoretical work that explains the negative impact of deflation. This work emphasizes how deflation raises the burden of existing debts (Tobin 1980; Palley 1999), how it alters price expectations and gives agents an incentive to switch into money away from real capital (Tobin 1975), and how it makes it impossible for firms to recover costs that they incur in the production process (Palley 1997). Deflation may also raise real interest rates, due to the existence of nominal interest rate floors (Krugman 2000<<AU: Which is correct—2000 or 1998 as in the References?>>), and due to increased risk of bankruptcy, which raises default risk (Palley 2000). For all of these reasons, relying on deflation to grow the real money

supply stands to consign an economy to a future of higher unemployment and lower growth.

The prospect of deflation could raise real interest rates and more than offset the beneficial real interest rate impact of eliminating original sin. In effect, the original sin of inflation could be replaced with the sin of deflation. This can be seen from the following simple model of the real interest rate, given by

$$\text{Real interest rate} = \text{real risk-free rate} + \text{default risk premium} + \text{cost of intermediation} \quad (1)$$

$$\text{Default risk premium} = f(\text{exchange-rate risk, deflation risk, financial fragility risk}) \quad (2)$$

The real interest rate decomposes into three components, including a default risk premium. The default risk premium is positively related to exchange-rate risk, deflation risk, and financial fragility risk. Dollarization eliminates exchange-rate risk, which lowers the default premium. But, it increases the deflation risk, which raises the premium. In addition, as noted earlier, elimination of lender-of-last-resort capacity stands to raise financial fragility risk due to an increased threat of bank runs. Finally, elimination of the lender of last resort could also raise costs of intermediation, making for another channel whereby dollarization could raise interest rates. This is because the absence of a lender of last resort would give financial intermediaries an incentive to hold more liquid reserves to protect themselves against runs, and such additional holdings raise costs.

Attracting foreign capital is another way for a dollarized economy to grow its money supply. Yet, there are several reasons to believe that dollarization could actually make it more difficult to attract such capital. One reason for undertaking foreign direct investment (FDI) is to diversify the country's location of production to protect against currency swings. On this basis, dollarizing economies stand to become less attractive sites for U.S. corporate FDI, because they will no longer provide such diversification. Furthermore, dollarized developing economies will be in competition with other developing countries for FDI, and they risk being undercut by those countries that can use the tool of devaluation to make themselves attractive to foreign investors. A third problem concerns productivity growth. The U.S. economy has historically had faster productivity growth than most developing economies. A dollarized

developing country, therefore, risks falling behind in productivity relative to the United States, which will make it unattractive for FDI purposes. Yet, at the same time, they will no longer have the tool of devaluation to restore relative competitiveness.

A last problem with dollarization that partakes of a “public bad” concerns impacts on the global economy. Because dollarized countries need trade surpluses to grow their money supplies, this amplifies the incentive to engage in export-led growth. Consequently, dollarization threatens to amplify deflationary tendencies that already beset the global economy.

On the positive side, there is some possibility that dollarization could lead to more trade with the United States, thereby encouraging FDI and making it easier to earn the revenues needed to expand the money supply. Rose (2000) reported empirical findings that countries with common currencies experience a large and significant increase in bilateral trade. However, a note of skepticism is in order. Common currencies have usually been adopted by countries that are geographically proximate to each other and have shared political and economic agendas. Such conditions do not apply for most developing countries, and this suggests that Rose’s findings may be of little relevance for them, at least regarding dollarization.¹⁰ Moreover, Klein (2002) reported results challenging Rose’s findings.

Empirical Evidence on the Effects of Dollarization

Empirically, there is significant evidence supporting the low inflation benefits and adverse growth effects of fixed exchange rates and dollarization. Edwards (2001) reported that dollarized countries have had significantly lower inflation, have grown at significantly lower rates, had similar fiscal records, and were not spared current account reversals. Edwards and Magendo (2001) reported that dollarized countries have had lower growth, and that there is little difference regarding macroeconomic volatility. Levy-Yayati and Sturzenegger (2001) distinguished between short- and long-pegs (lasting more than five years) and reported that long pegs produce lower inflation at the cost of lower growth. Ghosh, Gulde, and Wolf (1998) provided empirical evidence confirming the beneficial low inflation properties of currency boards. Fatas and Rose (2001) reported that common currency areas have no impact on fiscal discipline, and dollarization actually weakens fiscal

discipline. This fiscal policy finding is supported by Hamann (2001), who found no evidence that fiscal discipline is enhanced by an exchange-rate nominal anchor. This finding is understandable, because low-inflation policies bolster the confidence of bond market investors, and governments may, therefore, have even greater access (at least temporarily) to borrowing. Fixed exchange rates and dollarization handcuff monetary policy but leave open debt-financed fiscal policy, at least until debt burdens become unsustainable.

The Case for the Middle: Managed Exchange Rates and Managed Capital Mobility

Flexible and fixed exchange rates have advantages and disadvantages, and the performance of each is significantly affected by capital mobility. In the wake of the financial crises of the late 1990s, some have argued that countries need to move to the extreme of either perfectly flexible exchange rates or very fixed exchange rates, such as dollarization. However, both freely flexible and very fixed exchange rates suffer from severe limitations. The former are subject to speculation and mispricing of the exchange rate, which is a critical macroeconomic price. The latter creates financial fragility—remove the exchange rate as a mechanism of macroeconomic adjustment, and cannibalize monetary policy and sustainable fiscal policy.

Instead of pure floating or extreme fixed exchange rates, policy makers should opt for the middle ground in the form of managed exchange rates. Because exchange rates are impacted by capital flows, there is also need for market-compatible forms of capital control that encourage stable flows. This issue is beyond the scope of the current paper. However, regarding managed exchange rates, a strong candidate is some form of crawling band target zone system, as proposed by Williamson (1985, 1999), Bergsten, Davanne, and Jacquet (1999), Blecker (1999), Grieve Smith (1999), and Weller and Singleton (2002). Such a system involves choosing a number of parameters that would need to be negotiated by participants. First, there is choice of the target exchange rate. Second, there is the choice of size of the band in which the exchange rate could fluctuate. Third, there is a choice of whether the band would be hard or soft. A hard band is automatically and decisively defended; a soft band is one that allows for marginal temporary deviations outside the band, while retaining a commitment to bring the exchange rate back within the band when

market conditions are most conducive. Fourth, there is the choice of the rate of crawl. This involves determining the rules governing the adjustment of the target and band. Issues here concern the periodicity of adjustment and the rule governing adjustment of the nominal exchange rate.

Regarding the target exchange rate, a sensible candidate is the notion of fundamental equilibrium exchange rates proposed by Williamson (1994). The basic notion is that participating countries select a set of exchange rates consistent with their targeted current account and GDP outcomes. Operationally, for the single country case, this is done as follows. The first step is to empirically estimate a current account equation of the following form:

$$CA = \alpha_0 + \alpha_1 Y + \alpha_2 e + \alpha_x X \quad (3)$$

where CA is the current account; Y equals GDP; e equals the exchange rate; and X is the vector of exogenous variables. This estimated equation is then solved to yield the fundamental equilibrium exchange rate (e^*) consistent with the target current account (CA^*), target GDP (Y^*), and given levels of exogenous variables, yielding

$$e^* = -\alpha_0/\alpha_2 - \alpha_1 Y^*/\alpha_2 + CA^*/\alpha_2 - \alpha_x X/\alpha_2 \quad (4)$$

In a multicountry exchange-rate system, these equations need to be estimated and solved simultaneously across countries to ensure a consistent set of exchange rates. Moreover, it is also necessary for countries to agree on a consistent set of national current account targets, as not all countries can run surpluses.

Finally, rules of intervention to protect the target exchange rate need to be agreed upon. Historically, the onus of defending the exchange rate has fallen on the country with a weakening exchange rate. This requires the country to sell foreign exchange reserves to protect the exchange rate. Such a system is fundamentally flawed, because countries have limited reserves, and the market knows it. This gives speculators an incentive to try and “break the bank” by shorting the weak currency, and they have a good shot at success, given the scale of low-cost leverage that financial markets can muster. Recognizing this, the onus of exchange-rate intervention needs to be reversed so that the country with strong currency (the central bank with an appreciating exchange rate) is re-

sponsible for preventing appreciation, rather than the country with weak currency being responsible for preventing depreciation (Palley 2003). Because the bank with strong currency has unlimited amounts of its own currency for sale, it can never be beaten by the market. Consequently, once this rule of intervention is credibly adopted, speculators will back off, making the target exchange rate viable. Such a procedure recognizes and addresses the fundamental asymmetry between defending weak and strong currencies.

Conclusion: Beyond the Mentality of Policy Passivity

During the 1990s, exchange rates emerged as a critical economic variable. The unstable exchange-rate environment of the 1990s prompted a belief that the center cannot hold, and countries will be better served by moving to the extreme of either pure floating rates or extreme fixed rates.¹¹ This belief is at odds with reasoning and the evidence. Extreme fixed exchange rates impose a policy straitjacket that has a high cost in terms of growth, while pure flexible exchange rates are subject to disruptive speculation. On this score, there are many theoretical reasons for believing that financial markets are prone to herd behavior, and there is strong empirical evidence that exchange rates depart from their theoretically warranted equilibrium levels, be they defined as purchasing power parity or as the exchange rate consistent with sustainable current account deficits. These facts challenge the claim that policy should abandon the center. As Williamson (1999) observed, policy makers who use theory to think sensibly about the exchange rate and how to manage it can do a better job than a pure unregulated float. They can also do better than locking the policy cupboard and throwing away the key, as implied by dollarization.

Notes

1. By economic fundamentals are meant the tastes or preferences of agents, the resource endowment of the economy, and the production technology of the economy.

2. I reviewed the arguments for and against capital mobility in Palley (1998). Another review is provided in Blecker (1999). The argument for capital mobility is that free international capital, as with domestic capital markets, makes for a more efficient allocation of resources that raise welfare by improving returns to borrowers and savers and raising growth. The case against it is that it can lead to misaligned interest rates and asset prices that are incompatible with full employment; it can expose economies to financial instability; and it can contribute to loss of economic policy autonomy by allowing financial markets to discipline governments by voting with their feet.

3. Interestingly, Keynes also supported fixed exchange rates as a policy discipline device, hence his willingness to support the Bretton Woods agreement. However, for Keynes, the problem was not one of inflation but rather one of competitive devaluation. That is, governments might show a tendency to let their exchange rate fall to gain pricing advantage in international goods markets. This is what happened in the 1930s—rather than focusing on expanding domestic demand, governments sought to reflate their economies through currency depreciation.

4. The problem posed by price rigidity for fixed exchange rates and global monetarism explains why the IMF has emphasized “labor market flexibility” in its programs. Thus, in the 1990s, the IMF’s structural adjustment program for Argentina included conditionalities requiring labor law reform facilitating layoffs and wage cuts. The economics of fixed exchange rates, therefore, encourage nonneutral labor market policy.

5. This is the doctrine of “global monetarism.”

6. Flexible exchange rates also have a deflationary cost. Depreciation helps the country in deficit correct its trade balance, but it does so by shifting demand away from the country with surplus.

7. This is because the central bank has a finite amount of foreign reserves with which to defend the currency. However, if the onus of exchange-rate defense was put upon the central bank with strong currency, then speculators could not win. This is because the strong bank, with currency that is in demand, can mobilize the unlimited supply of the money “printing press.” The conventional wisdom that speculators cannot beat central banks therefore remains true, but only if institutional arrangements are such that the onus of exchange-rate defense is placed on the central bank with strong currency.

8. The similarity between currency boards and “safe” banks is noted by Tobin (1998). The safe bank proposal is designed to circumvent the need for domestic deposit insurance, which some argue is a cause of moral hazard in domestic financial markets.

9. The same problem applies to currency boards, and this is what happened to Argentina.

10. However, the findings may be relevant for the debate over regional currency unions.

11. The easy abandonment of the middle may also reflect the dominance of a conservative political economy that is suspicious of government. Bullish support for pure flexible and extreme fixed exchange rates reflects forms of market fundamentalism. The former view asserts that markets work efficiently and do not need government assistance. The latter asserts that monetary and exchange-rate policy is not needed, because domestic price and nominal wage adjustment will do the job. The mistrust of government is also seen in arguments promoting central bank independence and in arguments for international capital mobility as a form of policy discipline device. Dollarization can also be viewed in this light, being an attempt to solve a domestic political problem by eliminating national money.

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