

SOME THEORY AND HISTORY OF DOLLARIZATION

Kurt Schuler

The unfamiliar, however simple, is often hard to understand because it requires a slightly different way of thinking. Official dollarization is a case in point. It is hard to conceive of a simpler monetary system than using somebody else's currency. There is no central bank, no independent exchange rate, and more generally no independent monetary policy. Yet precisely because most countries have central banks, people often think about dollarization by using a frame of reference derived from central banking. In this article, I make a few points about the theory and history of dollarization that I hope will provide a better understanding of the system.

All “Fixed” Exchange Rates Are Not Alike

About 10 years ago, a consensus began to develop among economists that the extremes of fixed and floating exchange rates were less prone to currency crises than intermediate exchange rates. This so-called bipolar view gained adherents after currency crises in East Asia, Russia, and Brazil in the late 1990s (Fischer 2001). The crises had severe effects on countries that had officially or unofficially linked their currencies to the U.S. dollar, neither letting them float without government intervention nor tying them so tightly to the dollar as to forgo independent monetary policy. Although the bipolar view still has adherents, Argentina's spectacular economic depression and currency crisis of 2001–02 led many observers to conclude that fixed exchange rates are more prone to crises than floating rates, so floating

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rates are the only consistent policy (Feldstein 2002: 14). One might call the result the unipolar view.

Before hastily agreeing with this potted summary of recent monetary history, it is worth thinking about whether all “fixed” exchange rates are really alike. Panama has no central bank, no locally issued paper money (people use U.S. dollars instead), and no exchange controls restricting trade in foreign currencies.¹ Jordan’s central bank maintains an officially acknowledged exchange rate of 0.709 Jordanian dinar per U.S. dollar, and imposes no exchange controls that significantly hinder trading in foreign currency. China’s central bank has maintained an unofficial but in practice rigid exchange rate of 8.28 yuan per U.S. dollar since May 1995. China has extensive exchange controls, but an active foreign exchange market exists, and most observers consider that if anything, the currency is undervalued. Cuba’s central bank maintains an official exchange rate of one peso per U.S. dollar. Cuba has comprehensive exchange controls and no market where private parties can trade large amounts of foreign exchange legally; as of November 2004, the exchange rate in the black market is about 26 pesos per dollar. Are these exchange rate arrangements enough alike that we should lump them together under the same term the way textbook treatments and more advanced discussions alike often do?

I argue that the answer is no. The four exchange rate arrangements mentioned differ in two dimensions: convertibility and monetary sterilization. Convertibility is the ability to exchange domestic currency for foreign currency without restrictions. Sterilization, also known as sterilized intervention or neutralization, is action by the monetary authority to offset the effect of changes in demand for foreign currency on the supply of the domestic monetary base, or vice versa.²

Panama has full convertibility and no sterilization. Jordan has full convertibility and sterilization. China has limited convertibility and sterilization. Cuba has no convertibility; it also has no sterilization because as a centrally planned economy it has no officially tolerated

¹The Panamanian government issues coins, and maintains the Panamanian balboa (equal to one dollar) as a national unit of account, but it has not used these features of its monetary system to exercise an independent monetary policy.

²The monetary base is the medium accepted for final settlement in the local banking system. Today in most countries the monetary base comprises notes (paper money) and coins issued by a central bank, plus deposits at the central bank, which commercial banks use as reserves. In some countries, treasuries, rather than central banks, issue coins.

financial markets in which its central bank could engage in sterilization.

Discussions of exchange rate arrangements frequently neglect exchange controls and their effects on the workings of the money supply. The effects can be dramatic, though, as big as the differences between Panama and Cuba. In Panama, if the public wishes to hold more “domestic” currency, it acquires more U.S. dollars without help or hindrance from the Panamanian government. In Cuba, if the public wishes to hold more domestic currency, there is no direct connection with events in the foreign exchange market, nor is there any system of rapid feedback to ensure that the central bank supplies more currency in the short term. (Over the long term, though, the central bank has *oversupplied* the Cuban peso, which is why it is so depreciated on the black market.) In the extreme, exchange controls totally isolate the domestic financial system from world financial markets.

Exchange controls were common from the 1930s until the early 1990s in rich countries. They remain common in poor countries, although for more than 20 years, the trend has been for controls to diminish. Having noted their prevalence, though, let us set them aside for a moment, because the matters in the next several paragraphs are simplest to think about where no exchange controls exist.

Along with economists such as Milton Friedman and Robert Mundell, I use the term “fixed” to denote rigid exchange rates where no exchange controls exist and no sterilization occurs, and I use the term “pegged” to denote rigid rates where sterilization occurs. Because economists still lack a generally agreed set of terms and classifications for exchange rates, some economists use other terms to distinguish the two types of exchange rates, such as “super fixed” and “fixed,” or “hard pegged” and “soft pegged,” or “fixed” and “fixed but adjustable.” Other economists do not think the presence or absence of sterilization makes much difference. The result is a fog of terminology, but one we can cut through with the help of examples.

Under a fixed exchange rate in the sense I use the term, the link between the foreign exchange market and the monetary base is tight. Suppose holders of \$100 million of foreign currency wish to obtain domestic currency in the form of the monetary base. They exchange their foreign currency at the rigid exchange rate for the equivalent of \$100 million in domestic currency. The monetary base rises by the equivalent of \$100 million. In the reverse case, if they wish to exchange \$100 million of domestic currency for foreign currency, the monetary base falls by the equivalent of \$100 million. The monetary base changes “automatically” in response to changes in demand.

Under a pegged exchange rate, the link between the foreign currency market and the monetary base is looser. Suppose again that holders of \$100 million of foreign currency wish to obtain domestic currency. The central bank can allow the domestic monetary base to rise by exactly \$100 million, but it can also intervene—sterilize—so that the monetary base rises by less than \$100 million, more than \$100 million, remains unchanged, or even falls. Open-market operations and other tools give the central bank discretionary power to alter the amount of domestic assets it holds.

Under a fixed exchange rate, the monetary base changes strictly in accord with changes in market demand for it. Under a pegged exchange rate, sterilized intervention creates situations in which the monetary authority is “fighting the market” by maintaining a monetary base that is higher or lower than the market demand. A typical case is that demand for the domestic monetary base is falling, but the central bank does not wish to reduce the monetary base because it fears higher interest rates, slower economic growth, and irate politicians. The central bank instead sells some of its foreign reserves to support the exchange rate. If the central bank persists, and demand for the domestic monetary base does not recover, the central bank eventually has no foreign reserves left and can no longer maintain the previous rigid exchange rate. A currency crisis and devaluation result.³

“Austrian” economists argue that setting the monetary base in a discretionary, monopolistic manner, as happens under pegging, destroys knowledge generated by the foreign exchange market, and therefore causes the money supply to send false signals that disrupt economic coordination. Keynesian economists argue that the ability to exercise discretion gives the monetary authority power to offset disruptions that originate from financial markets. Whatever one’s views on the desirability of discretionary monetary policy, though, it seems evident that its absence or presence has implications for the way the money supply works and for the wider economy. It is

³For a diagrammatical exposition, see Schuler (2002: 7); Hanke (1998) makes some of the same points. These articles and others like them offer a theoretical case for the so-called bipolar view of exchange rates. The case is that exchange rates that are fixed in the sense defined here allow the supply of the real monetary base to adjust to the real demand “automatically” through changes in the nominal monetary base. Cleanly floating exchange rates also allow the real monetary base to adjust to the real demand “automatically,” but through changes in the exchange rate, which imply changes in purchasing power. Unlike intermediate exchange rates such as standard pegs, crawling pegs, and managed floats, neither fixed nor cleanly floating rates involve sterilization, so neither offer room for a monetary authority to “fight the market.”

therefore important not to conflate fixed and pegged exchange rates, or whatever alternative terms one wishes to use to distinguish rigid exchange rates without sterilization from rigid rates with sterilization.

The distinction between fixed and pegged exchange rates does not depend on durability. Sometimes people call an exchange rate “pegged” if it has not lasted long, and “fixed” if it has. The terminology I propose rests on analytical differences: in particular cases, a fixed rate may last but a short time, while a pegged exchange rate may last for years. Other things being equal, though, fixed rates have in their favor that they contain a self-correcting process for adjusting the supply of the monetary base to the market demand.

Some types of monetary authority always or almost always involve fixed exchange rates, while other types always or almost always involve nonfixed rates. For example, a currency board involves a fixed exchange rate. A currency board issues notes and coins (and deposits, if any) fully convertible at a fixed exchange rate into an anchor currency, and backed by net reserves, held in foreign assets only, equaling 100 percent or slightly more of its monetary liabilities. The Currency School of British economists developed the concept of a currency board in the early 1800s, and put it into practice starting in the mid-1800s, precisely because they desired a system that made adjustment of the monetary base automatic and did not involve discretionary monetary policy.

Many countries have had currency boards that have operated according to the principles just described (see Schuler 2005). Since the 1990s, though, the monetary regimes in a number of countries have commonly been called currency boards even though the monetary authorities engage in sterilization and other forms of discretionary policy. The prime example is the monetary system Argentina had from April 1991 to January 2002, which Argentines called the convertibility system. It had a rigid exchange rate of one peso per dollar and no exchange controls for most of its life. Far from avoiding sterilization, though, Argentina’s central bank sterilized 59 cents of every dollar of foreign reserves that flowed in or out per quarter (Hanke (2002: 207, 210). The central bank was also extensively involved with regulating the financial system, issuing almost 1,600 major regulations during the life of the convertibility system.⁴ Economists’ failure to consult the data on how the convertibility system

⁴The figure refers to “A” communications (see www.bcra.gov.ar). There were also thousands of “B” and “C” communications, which were generally less important.

really worked has created confusion both about currency boards and about fixed exchange rates.

Episodes of Official Dollarization

Dollarization is another kind of fixed exchange rate. Dollarization is used in varying senses that mean everything from widespread illegal use of foreign currency alongside domestic currency to official approval for use of foreign currency as the main or sole means of payment and unit of account. The latter variety is called full or official dollarization, and I will focus on it to the exclusion of other varieties, because it is the most different from the central banking systems with nonfixed exchange rates that exist in most countries today.

There are by now a number of books, articles, and Web sites on policy issues involving dollarization (e.g., Dean, Salvatore, and Willett 2003). The history of dollarization, though, remains little known. More than one recent paper by economists on dollarization has made statements along the lines that “There are very few observed cases of dollarization, and history provides very little guidance on its consequences” (Chang and Velasco 2003: 53; see also Edwards 2002: 243). Such claims say more about the state of historical knowledge among economists than they do about dollarization. The experience of Panama, which a number of researchers have supposed to be the key case of dollarization, is certainly worth studying (Moreno 1999 is a place to start). With so many other episodes available for examination, though, it is unscientific to consider Panama as a test case that “proves” something about dollarization as a whole, just as it would be unscientific to consider that any proposition about central banking stands or falls on the experience of one country or a few countries.

Table 1 lists about 100 cases of dollarization. It arrives at them by applying a quite narrow definition of dollarization, under which (1) people used a foreign unit of account, foreign notes (paper money), and in some cases coins with official sanction, and there were no domestic issuers of notes (except in Honduras, where there was a small local issue that apparently had little importance); (2) commercial banks existed (except in a few territories with populations so small that banks are quite recent, if they exist at all); and (3) use of foreign currency was more than an explicitly transitory step intended to last just a year or two. Relaxing these criteria approximately doubles the number of historical episodes of dollarization.

Research into historical episodes of dollarization is still at an early phase—so early that Table 1 is the first comprehensive compilation that anybody has tried to make. Among the episodes in the table, only a

TABLE 1
SELECTED HISTORICAL EPISODES OF DOLLARIZATION

American Samoa	?-present	Dominica	1938-1951
Albania*	1912-1925	Dominican Republic*	1899-1947
Andorra*	?-present	East Timor*	2000-present
Anguilla	1938-1951	Ecuador*	2000-present
Antigua and Barbuda	1938-1951	Egypt*	1856-1898
Bahrain	1920-1965	Equatorial Guinea	by 1905-1969
Bhutan*	1968-1974	El Salvador*	2001-present
Botswana*	1950-1976	Eritrea	1800s-1969
British Indian Ocean Territory	1919-present		~1900-1952
British Virgin Islands	1973-present		1962-1993
Brunei*	1945-1951	Gambia	1902-1913
Cameroon	By 1910-1916	Ghana	1896-1913
Cayman Islands	?-1972	Gibraltar	1888-1927
Christmas Island	?-present	Grenada	1938-1951
Cocos Islands	?-present	Guam	?-present
Cook Islands	1969-1987?	Honduras*	1912-1950
Comoros	1995-present	Indonesia	1794-1807
Cuba*	1885-1926	Iraq	1917-1932
Cyprus	1902-1934	Israel	1917-1927
Cyprus, Northern*	1880s-1914	Jordan	1917-1927
	1974-present	Kenya	1896-1898
		Kiribati*	1930s-present

continued

TABLE 1 (continued)
SELECTED HISTORICAL EPISODES OF DOLLARIZATION

Kosovo	1999–present	Namibia*	1906–1914
Kuwait	1942–1961		1962–1993
Lesotho*	1921–1980	Nauru*	1968–present
Liechtenstein*	?–present	Nepal*	1937–1945
Liberia*	1880s–1985	Nigeria	1891–1913
Libya	1912–1943	Niue	1988–present
Madagascar*	1886–1926	Norfolk Island	?–present
Malaysia	1849–1888	Northern Mariana Islands	?–present
	1909–1937	Oman*	1948–1970
Malta	1903–1939	Palau*	?–present
Marshall Islands*	1961–present	Panama*	1903–present
Mayotte	1976–1998	Papua New Guinea	1916–1975
Micronesia*	?–present	Peru*	1887–1914
Monaco*	1865–present	Pitcairn Islands	1800s–present
Montenegro	1999–present	Puerto Rico	1899–present
Montserrat	1938–1951	Qatar	1949–1966
Morocco	1897–1907	Saint Helena	late 1700s–1976
	1800s–1969	Saint Kitts and Nevis	1938–1951
		Saint Lucia	1938–1951

Saint-Pierre and Miquelon	1890?	1904–1914
Saint Vincent and Grenadines	1938–1951	?–present
San Marino*	1897–present	By 1873–1904
Saudi Arabia*	1918–1952	1976–present
Seychelles	1903–1919	1906–1920
Sierra Leone	1898–1913	1946–1973
Singapore	1840–1849	1934–present
Solomon Islands	?–1977	1929–present
Somalia	1920–1950	1862–1876
Swaziland*	1921–1974	1930s–present
Tajikistan*	1991–1995	1894–1951
Tanzania	1893–1907	1959–1964
	1916–1920	
		Togo
		Tokelau
		Tunisia*
		Tuvalu*
		Uganda
		United Arab Emirates*
		U.S. Virgin Islands
		Vatican City*
		Vietnam
		Western Sahara
		Yemen*

NOTES: An asterisk (*) denotes countries that were independent for part or all of their episodes of dollarization. Northern Cyprus is recognized as independent only by Turkey; Montenegro might be termed semi-independent. Dates are not necessarily those when use of foreign currency began; rather, they are typically those when foreign currency was used *and* commercial banks existed. The list excludes subnational cases, such as the use of the “Swiss print” Iraqi dinar in the Kurdish areas of Iraq from 1993–2003 when the currency was demonetized in other parts of Iraq. I have done a fair amount of research for the African and Asian cases, but less for the other cases, so the years may not be exact for some of them.

SOURCES: Schuler (2005) and further country research.

few of the recent ones have received much attention. Some cases will be of little interest because they have occurred in places having extremely small populations and only rudimentary financial systems. There have, however, been episodes of dollarization in countries ranking in the broad middle by a number of measures of size and economic development. These countries, which include Cuba, the Dominican Republic, Iraq, Israel, Jordan, and Peru, are neither giants nor microstates, and neither rich nor unusually poor by the standards of the periods when they were dollarized.

Conclusion

From my research so far into historical episodes of dollarization, two elementary but important conclusions suggest themselves. The first is that most countries that were dollarized but now have their own currencies and, in addition, maintain truly independent monetary policies have performed worse in terms of monetary stability than they would have by remaining dollarized. As a case in point, consider Cuba. Cuba used the U.S. dollar early in the 20th century; introduced silver certificates issued by its treasury in 1934; and in 1950 established a central bank, which persists today. I have already mentioned the depreciation of the Cuban peso from one per U.S. dollar originally to about 26 per dollar on the black market today.

Most of the episodes in the table used a major world currency or at least an important regional currency. The major currencies have gotten that way in part because of their relatively good long-term records, so it stands to reason that local currencies established to succeed them had a difficult time in performing as well. Some notable exceptions have occurred in the Middle East, where the currencies of several oil-rich countries have preserved their purchasing power better than the Indian rupee, which those countries formerly used.

The other conclusion is that it is vital to think in terms of long spans of time. A year or a few years is not long enough; even a decade is probably not long enough. Look at the countries that used the U.S. dollar in the 1930s. They were subjected to monetary policy decisions by the Federal Reserve System that have since come to be understood as tragically inept. But now look at those that have their own currency and consider whether they are better off today for it. To return to the example of Cuba, in its case the obvious answer seems to be no. The Cuban Revolution converted Cuba's central bank into a tool of comprehensive central planning, a system that has not worked well anywhere.

A question about the historical episodes of dollarization that

remains to be explored is the relationship between dollarization, financial integration, and economic stability. Panama has a long-term record of economic stability unusual for a country at its income level. It has not just dollarization, though, but an unusually high degree of integration between domestic and world financial markets. Foreign banks in Panama compete with domestic banks in attracting deposits and making loans to individuals; unlike foreign banks in many other countries, they do not confine their attention to large companies involved in international trade. In some of the other episodes, domestic financial markets have not been so well integrated with world markets. Comparing their experience with cases such as Panama would help us understand better the nature of the contribution that financial integration makes to economic stability.

Greater awareness of the many historical episodes of dollarization can help with the still unfinished job of asking more informed questions and giving more accurate answers about how dollarization works, and whether and how it might work better.

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