WP/09/37

IMF Working Paper

Dedollarization in Liberia—Lessons from Cross-country Experience

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INTERNATIONAL MONETARY FUND

 WP/09/37

IMF Working Paper

African Department

Dedollarization in Liberia—Lessons from Cross-country Experience

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Authorized for distribution by Arend Kouwenaar

March 2009

Abstract

Liberia's experience with a dual currency regime, with the U.S. dollar enjoying legal tender status, dates to its founding as a sovereign country in 1847. Following the end of the most recent episode of civil war in late-2003, the new government has expressed interest in strengthening the role of the Liberian dollar. Liberia, however, is heavily dollarized, with the U.S. dollar estimated to account for about 90 percent of money supply. Cross-country experience suggests that dollarization does not preclude monetary policy from achieving its primary objective of price stability, and that successful and lasting dedollarization may be difficult to achieve.

JEL Classification Numbers: E52

Keywords: dedollarization

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[1] Jules Leichter was co-desk economist for Liberia when this paper was prepared; Jeta Menkulasi was a summer intern at the IMF in 2007.

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History of Dollarization in Liberia[2][3]

1. **Dollarization can be caused by a number of factors,** including: (i) political instability and conflict; (ii) economic and financial instability; (iii) institutional arrangements, e.g. by according legal tender status to the foreign currency; and (iv) large donor flows.

2. **The use of a foreign currency in an economy can lead to different types of dollarization.** Bogetić (2000) defines full or official dollarization as a complete monetary union with a foreign country from which a country imports currency, making the foreign currency full legal tender and reducing its own currency, if any, to a subsidiary role. According to Baliño, Bennett, and Borensztein (1999), partial or unofficial dollarization occurs when residents hold a large share of their financial wealth in assets denominated in a foreign currency, even though that currency lacks the legal tender privileges of the domestic currency. Three types of dollarization are commonly identified: (i) financial dollarization: the substitution of local currency assets or liabilities for foreign currency assets or liabilities; (ii) transactions dollarization: the use of foreign currency for transactions; and (iii) real dollarization: the use of foreign currency for denominating prices and wages. All of these are present in Liberia, which is officially a dual currency regime with the Liberian dollar and U.S. dollar both being legal tender.[4] While either currency can be used for any transaction, most economic activity takes place in U.S. dollars, including the payment of taxes and government expenditures. Currencies issued by other countries circulate freely in Liberia and bank accounts with Liberian banks can be maintained in them, but they are not legal tender.[5]

3. **Since Liberia was established as an independent country in 1847, its economy has been either fully or mostly dollarized (Table 1)**. Foreign currencies have always been important to the Liberian economy, both as a store of value and as a medium of exchange. The choice of currencies was dictated by the country's close economic ties with British West African colonies and the United States. Liberian dollar coins have circulated since independence, but banknotes have been used more sparingly. After circulating from the 1850s to the 1890s, the notes were not reintroduced for almost a century. President Samuel Doe minted Liberian dollars ("Doe dollars") in the 1980s. During the civil war "J.J. Roberts" banknotes were issued starting in 1989 in areas controlled by Charles Taylor and

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[2] The authors would like to thank Robert Powell, Steve Radelet, Anne-Marie Gulde-Wolf, Romain Veyrune, Annamaria Kokenyne, Bozena Radzewicz-Bak and Scott Roger for useful comments.

[3] This paper was presented in October 2008 in a seminar to officials of the Central Bank of Liberia and Ministry of Finance.

[4] The situation in Liberia should be distinguished from the acceptance of a currency in payments on a voluntary basis, i.e. based on a contract between two parties. In Liberia, acceptance of either the Liberian or U.S. dollar for any transaction (both official and private) is prescribed by law.

[5] See "An Act to Authorize the Establishment of the Central Bank of Liberia," Part V, 19(1).

"Liberty" notes were issued starting in 1991 in areas controlled by ECOWAS/ECOMOG. While both were issued at par with the U.S. dollar, there were substantial fluctuations in exchange rates in the parallel market. In January 1998 the exchange rate peg was abandoned and the exchange rate with the U.S. dollar was devalued from L$1/US$1 to L$43/US$1. In 2001 the Central Bank of Liberia[6] (CBL) began issuing Liberian dollar notes, which are considered legal tender today. Since the 1998 devaluation, the Liberian dollar has depreciated on average by 5 percent a year, roughly in line with the inflation differential between Liberia and the United States.

Table 1. History of Currencies in Liberia

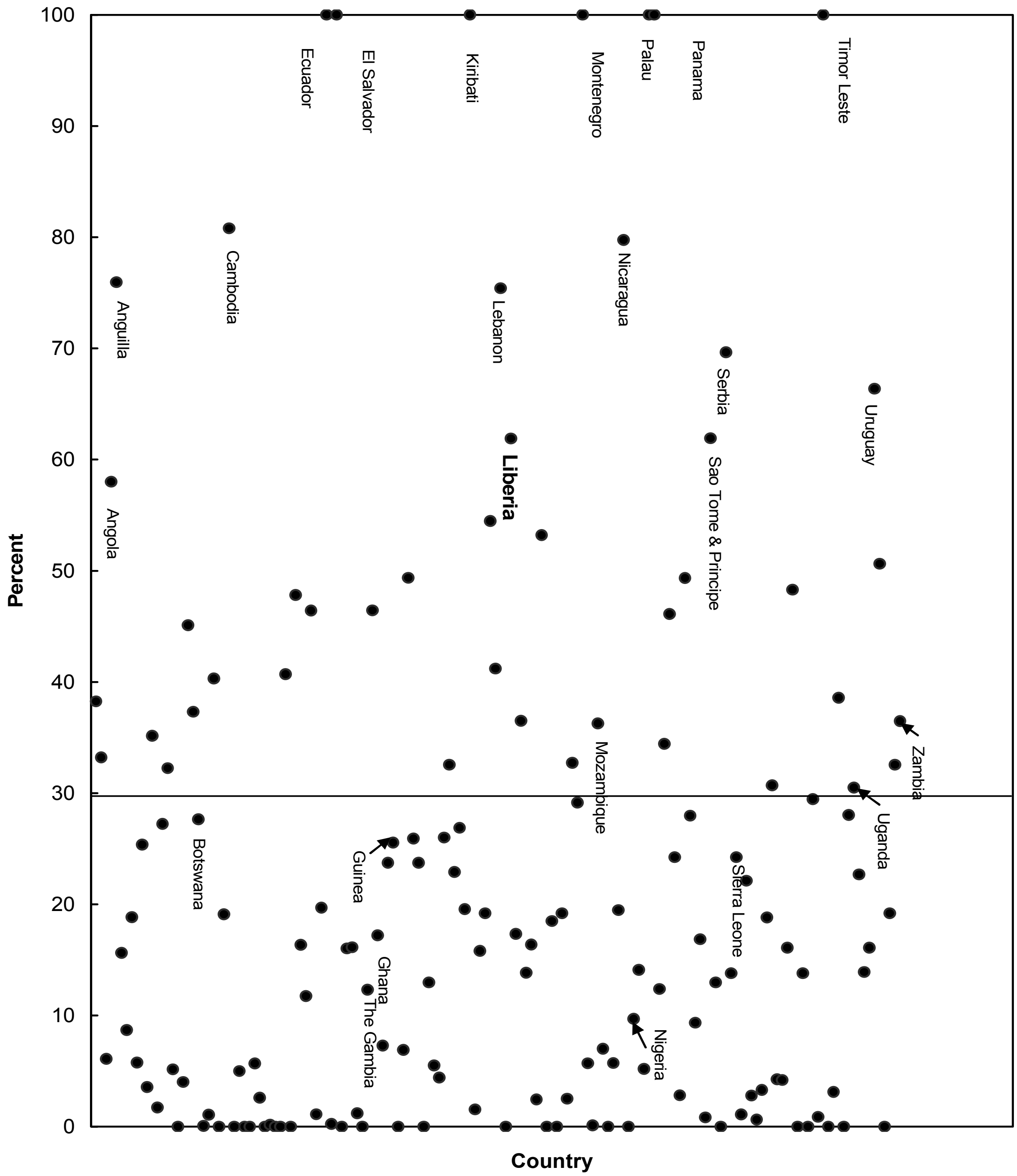
	U.S. Dollar	**West African Pound**	**Liberian Dollar Coins**	**Liberian Dollar Notes**
1847-1850s	X		X	
1850s-1880s	X		X	X
1880s-1912	X		X	
1913-1943*	X	X	X	
1944-2000**	X		X	X
2001-present	X		X	X

*The West African pound was legal tender during this period, replaced in November 1942 by the U.S. dollar.
**Liberian dollar notes were issued at par with the U.S. dollar by Charles Taylor during the 1989-97 civil war, while "Liberty" dollars was issued in areas controlled by ECOWAS in 1991 to invalidate notes looted from the central bank, effectively creating two currency zones.

4. **Liberia seems to be one of the most highly dollarized economies in the world (Figure 1).** Most estimates of the degree of dollarization do not include foreign currency in circulation, largely because it is difficult to measure. Instead they look at the ratio of foreign currency deposits to total deposits or to broad money, or, like Reinhart, Rogoff, and Savastano (2003), they construct an index of economic and financial indicators to capture a broader concept of dollarization. Baliño, Bennett, and Borenstein (1999) consider an economy to be highly dollarized if the ratio of foreign currency deposits to broad money exceeds 30 percent. In Liberia, this ratio was 62 percent in 2007 – in terms of this measure, Liberia in 2007 was the 14th most dollarized economy amongst developing countries and emerging market economies, and with São Tomé and Príncipe, the most dollarized economy in Sub-Saharan Africa. However, in a cash-based economy like Liberia's, measuring dollarization accurately requires an estimate of foreign currency in circulation. Estimates of the ratio of foreign currency in circulation and foreign currency deposits to broad money range from 82 percent to 95 percent, with an average of 90 percent (see Appendix I for a discussion of the methodology and a more detailed discussion of various measures of dollarization in Liberia).

[6] The Central Bank of Liberia was established on March 18, 1999, replacing the National Bank of Liberia.

Figure 1. International Comparison of Dollarization: Foreign Currency Deposits to Broad Money



[1] Other neighboring countries (Côte d'Ivoire, Benin, Burkina Faso, Guinea-Bissau, Mali, Niger, Senegal, and Togo are members of the BCEAO, and holding of foreign currency deposits by residents is not allowed.

Sources: IMF International Financial Statistics; and country desk economists.

5. **Implementation of monetary policy is complicated by the large amount of U.S. dollars in circulation and an underdeveloped financial sector.** The current monetary policy framework recognizes that in a highly dollarized and very open economy, the

exchange rate is the main transmission mechanism through which monetary imbalances affect prices. The CBL therefore targets relative exchange rate stability, consistent with IMF advice that complete dollarization or a currency board arrangement could adversely affect the economic recovery by imposing a severe liquidity constraint, and that complete dedollarization would pose a significant challenge for the CBL to maintain monetary discipline.

6. **This paper studies the benefits and challenges of macroeconomic management in a dollarized economy and the international experience with attempts to dedollarize; it suggests lessons and policy options for Liberia.** Empirical evidence on the macroeconomic costs of dollarization is mixed: while there is no clear evidence that increased dollarization significantly reduces the effectiveness of monetary policy, there is an emerging consensus that highly dollarized financial sectors may be more vulnerable to shocks. Some researchers have argued that high dollarization during a period of economic instability can reduce inflation and deepen financial markets. This has given rise to studies of whether highly dollarized economies should fully dollarize, attempt to dedollarize, or maintain the status quo. Few highly dollarized countries have attempted dedollarization, though countries pursuing a gradual, market-driven dedollarization have had some success. Those that tried to force dedollarization experienced considerable macroeconomic costs, and some returned to a high level of dollarization within a few years.

I. Macroeconomic Management in a Dollarized Economy

7. **The most important challenge associated with dollarization is the loss of effective control over monetary policy.** The small domestic currency component of the monetary base makes it difficult to control monetary growth, which reduces the effectiveness of monetary policy as a tool to stabilize the economy. The literature identifies other potential costs associated with dollarization[7]:

a. lower seignorage, given that only a portion of the monetary base is in local currency;

b. lower international reserves, because when transactions are conducted in the foreign currency, the central bank accumulates less of that currency as reserves;

c. loss of an effective exchange rate policy—the authorities cannot manage the exchange rate in response to exogenous shocks, so that adjustment through the real economy will be necessary;

d. loss of the lender of last resort role to a financial sector that holds large amounts of foreign currency deposits;

e. public and private sector balance sheet vulnerabilities due to excessive dollarization of liabilities; and

[7] See, for instance, de Zamaroczy and Sa (2003) and Galindo and Leiderman (2005)

f. larger output fluctuations since adjustments to external or domestic shocks would require nominal price and wage flexibility.

8. **However, evidence on the costs of dollarization is mixed.** Reinhart, Rogoff, and Savastano (2003) found no evidence in a study of 85 dollarized countries that dollarization has a significant negative impact on the effectiveness of monetary policy.[8] They show that dollarization does not increase the instability of velocity measures of monetary aggregates and that monetary aggregates are highly correlated with inflation, suggesting that in dollarized economies monetary policy is effective at controlling inflation. A case in point is Peru, which has recently adopted an inflation targeting regime despite being highly dollarized. However, they also find little correlation between monetary aggregates and real variables in dollarized economies, suggesting that there is limited scope for countercyclical monetary policy.

9. **There is some evidence that dollarized economies are more vulnerable to shocks.** Gulde-Wolf et al (2004) and Galindo and Leiderman (2005) suggest that countries should care about dollarization for financial stability reasons[9] related to the balance sheet effects of dollarization, i.e., when the increase in the local currency value of dollar liabilities outpaces the increase in the value of the borrower's assets or income flow. To the extent that dollar debtors may no longer be able to service their loans, this situation can trigger corporate and banking crises, exacerbate sudden stops, cause output volatility, and ultimately result in costly self-fulfilling macroeconomic crises. On the deposit side, dollarization enhances the scope for systemic, self-fulfilling liquidity crises triggered by persistent deposit withdrawals that at some point can no longer be accommodated due to limited holdings of liquid foreign assets.

10. **Some researchers have argued that significant dollarization can be an optimal response to a volatile economic environment.**[10] It may (i) lower inflation by reducing the impact of domestic money growth on inflation; (ii) promote financial deepening by encouraging individuals to deposit assets in the financial system; (iii) lower transaction costs by reducing the need to convert to local currencies; and (iv) promote fiscal discipline by reducing the ability of the government to monetize fiscal deficits.

11. **In postconflict Liberia, the authorities have succeeded in establishing and maintaining macroeconomic stability and supporting economic recovery in a highly dollarized environment.** Liberia's economy has been relatively stable since the end of the conflict in 2003 despite being one of the most highly dollarized in the world: inflation has been low and steady, the exchange rate of the Liberian dollar with the U.S. dollar has stayed

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[8] Galindo and Leiderman (2005) and Ize and Yeyati (2005) reach a similar conclusion.

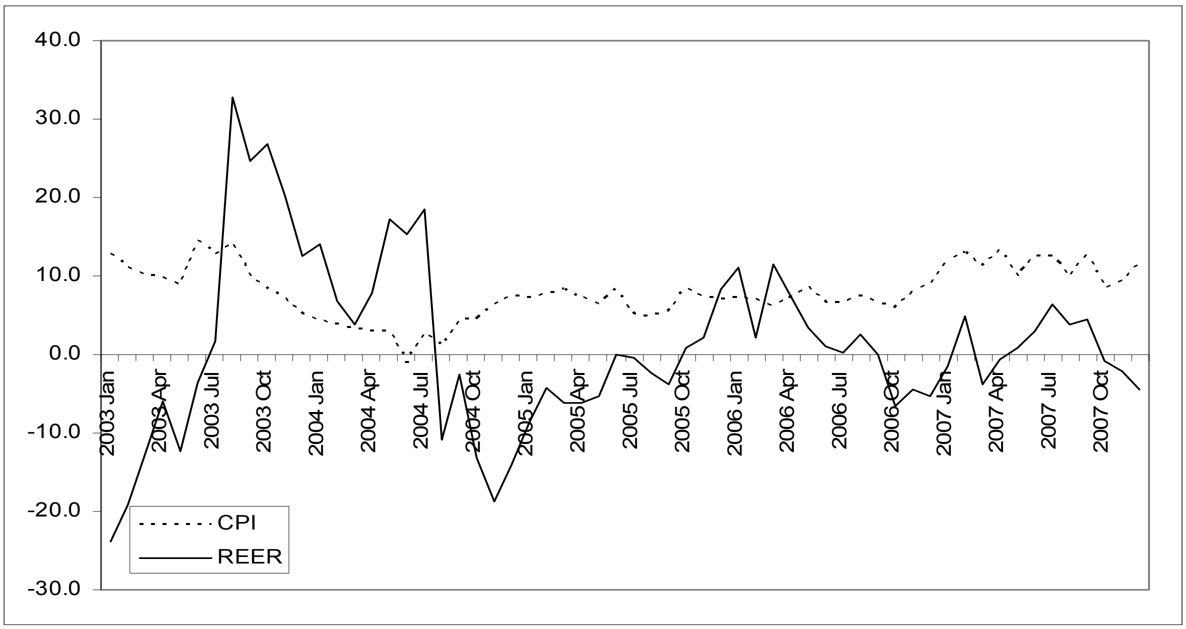
[9] See also Baliño, Bennett, and Borensztein (1999), Ize and Yeyati (2005), and Fernandez-Arias (2006).

[10] See, for instance, Baliño, Bennett, and Borensztein (1999).

in a range consistent with the inflation differential between Liberia and the United States, and growth has increased steadily. Fiscal policy has been restricted by adherence to a balanced budget policy, and the recapitalization of banks has helped stabilize the financial sector. Foreign direct investment in the natural resource sector has also risen steadily.

Figure 2. Liberia: Real Effective Exchange Rate and CPI

(Year-on-year, percent)



II. International Experience with Dedollarization

12. **Dollarization is a common phenomenon.** Of our sample of 154 developing countries and emerging market economies for which data are available, 45 are classified as highly dollarized at end 2007, using the Baliño, Bennett, and Borensztein (1999) definition (Figure 1), while the ratio of FCDs to broad money exceed 20 percent in a total of 63 countries. Most highly dollarized countries have not actively pursued policies to dedollarize. In practice, of the over 90 dollarized countries surveyed in the literature in 2001, 27 have chosen to fully dollarize (e.g., Ecuador, El Salvador, Montenegro and Panama)[11] or to accept a high level of dollarization to facilitate trade and economic cooperation and to benefit from the stability of the foreign currency (e.g., Brunei, Lesotho, Namibia, Bosnia-Herzegovina, Haiti, and the Bahamas), and 8 countries have actively pursued policies to promote dedollarization. According to Galindo and Leiderman (2005), dedollarization can be costly and very difficult; very few countries have been able to achieve it. Policies in most dollarized countries are aimed at financial market development (particularly in domestic

[11] According to de Zamaroczy and Sa (2003), seven of these countries use the currency of another country, and the other 20 belong to a currency union.

currency or inflation-linked instruments) to facilitate dedollarization once fiscal and monetary policy gains credibility.

13. **For countries that have pursued policies to promote dedollarization,[12] the results have been mixed.** In fact, Coe et al. (2006) note that only countries that have managed to avoid periods of high inflation or severe macroeconomic instability were able to avoid dollarization. Generally speaking, countries that have chosen a gradual market-driven approach have had more success at achieving sustained dedollarization than countries that have implemented a forced dedollarization reliant on administrative measures. Three basic approaches to reverse dollarization can be identified:

- *Macroeconomic policies*: pursuit of policies to keep the exchange rate and prices stable, for instance through inflation targeting. Financial liberalization that pushed up domestic interest rates also helped limit dollarization.

- *Regulatory/legal reforms*: changing the regulatory incentive structure by, for instance, setting differential reserve requirements or remuneration rates or adjusting provisioning and liquidity requirements. Other legal reforms are introducing alternative financial instruments, and requiring all or certain payments or contracts to be conducted in the local currency.

- *Administrative enforcement*: direct administrative measures such as prohibition of, or limits on, foreign currency deposits (FCD) for residents and dollar loans, restrictions on residents holding accounts abroad, taxes on dollar intermediation, and forced conversion to local currency deposits (LCDs).

14. **Dedollarization efforts have had only limited success.** The literature on dedollarization identifies four countries (Poland, Israel, Chile, and Egypt) [13] that are considered to have dedollarized successfully, i.e. where (i) the deposit dollarization ratio declined by at least 20 percentage points; (ii) settled at a level below 20 percent; and (iii) remained below that level with no substantial macroeconomic costs. These countries implemented policies to promote a gradual, market-driven dedollarization as part of a broad economic stabilization program. Mexico and Pakistan implemented a more rapid forced dedollarization and achieved a sustained dedollarization but experienced nontrivial macroeconomic costs (see Box 1). Forced dedollarization in Bolivia and Peru (in 1985) led to an initial drop in the measured level of dollarization but had substantial macroeconomic costs, forcing the authorities to accept increased dollarization a few years later. In both Bolivia and Peru governments attempted to reduce dollarization by converting foreign

[12] Brazil, Chile, Columbia, Venezuela, Israel, Poland, Armenia, Estonia, Lithuania, Nicaragua, Peru, Lao P.D.R., Bolivia, Honduras, Lebanon, Vietnam, Malaysia, Philippines, and Mexico.

[13] For a more detailed description of these cases, see Reinhart, Rogoff, and Savastano (2003); Galindo and Leiderman (2005); Ize and Yeyati (2005); Yeyati (2006); and Hardy and Pazarbasioglu (2006).

currency deposits into domestic currency deposits – this resulted in financial disintermediation, growth of off-shore deposits and a sharp reduction in private sector credit.

Box 1. Experience with Dedollarization

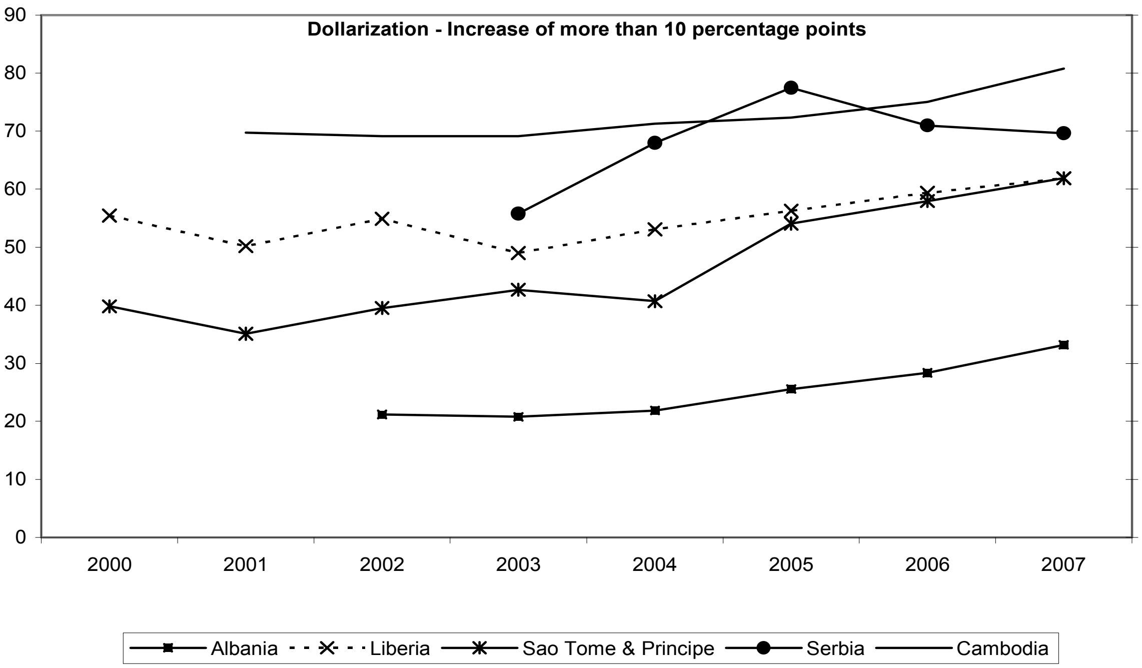
Market-driven dedollarization
Israel, Poland, Chile, and Egypt pursued a market-driven dedollarization that was gradual and successful. In these countries there was no direct policy attempt to dedollarize the economy rapidly. Rather, dedollarization was a consequence of policies aimed at lowering inflation and deepening financial markets. Markets for local-currency-denominated bonds were created, and differential remuneration rates on reserve requirements on FCD introduced a wedge in bank intermediation spreads. These measures were coupled with active bank supervision to ensure that banks had fully covered their foreign currency positions. At the same time, to hedge against exchange rate risk foreign currency loans were largely directed to sectors that earned foreign exchange. Israel and Chile also used indexation successfully to promote the use of the local currency to hedge against inflation and exchange rate uncertainty. Poland and Egypt offered very high interest rates on LCDs after the financial sector was liberalized. By 2007, the ratio of FCDs to broad money in Chile, Egypt and Poland was 5.7, 0.2 and 2.8 percent respectively, compared with 26 percent in Israel.

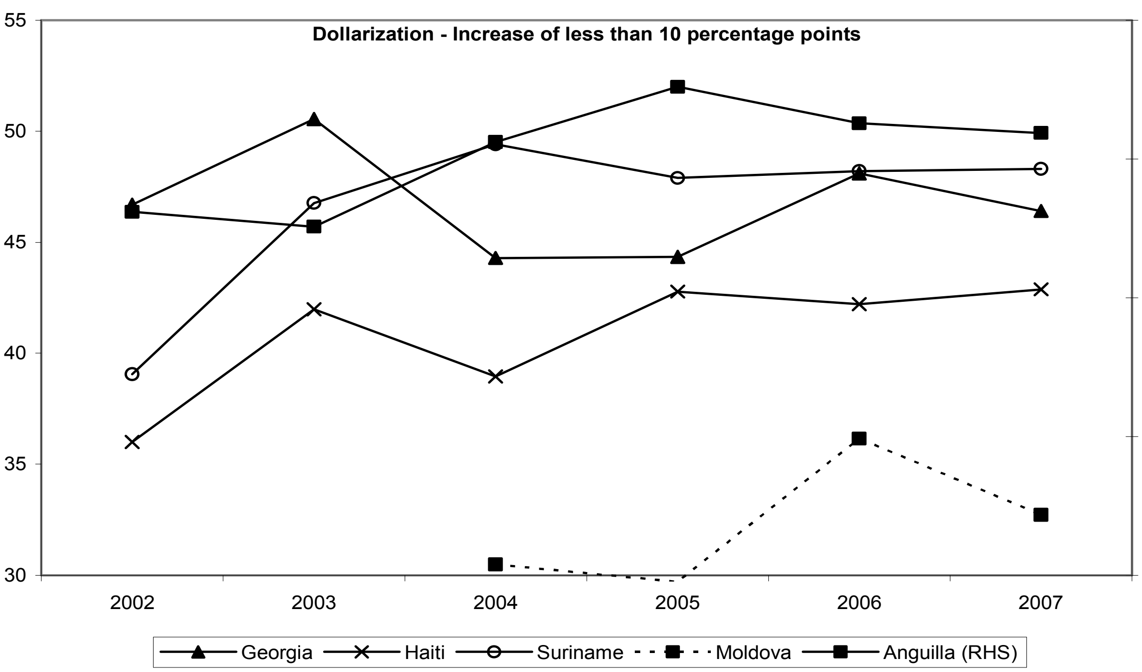
Forced dedollarization
Of the countries that implemented measures to force rapid dedollarization, only Mexico and Pakistan succeeded in keeping dollarization low (2.5 and 5.2 percent respectively at end-2007), although in both there were adverse macroeconomic consequences. Mexico forced a conversion of all U.S. dollar-denominated assets to pesos, and Pakistan froze all FCDs. These policies, implemented in reaction to economic shocks, were coupled with implementation of policies to stabilize the economy. Even though Mexico and Pakistan managed to reduce dollarization, they did so at some cost in the form of capital flight, lower remittance inflows, and less financial intermediation. According to Reinhart, Rogoff, and Savastano (2003), in Mexico these policies caused a 100 percent increase in capital flight and a dramatic decrease in bank credit to the private sector.

For other countries, forced dedollarization proved to be a failure and had significant macroeconomic costs. In the first half of the 1980s, Bolivia and Peru implemented measures to rapidly dedollarize the banking system by forcing conversions of FCDs to local currency. These efforts, undertaken while inflation was high, were followed by an abrupt depreciation of the local currency, resulting in capital flight and financial disintermediation. Continued macroeconomic instability over the next few years led to a reversal of policies, which lifted the restriction on FCDs and led to rapid redollarization. Bolivia is again one of the most highly dollarized economies in the world (45.1 percent at end-2007). In Peru, despite its track record of solid economic management over the past several years and the adoption of inflation targeting, dollarization remains high (46.1 percent at end-2007).

15. **Recent evidence confirms the earlier findings on dollarization.** Out of a total of 33 countries for which data are available, 10 became more dollarized during 2000-07 (Figure 3),

Figure 3. Increases in dollarization: 2000-07

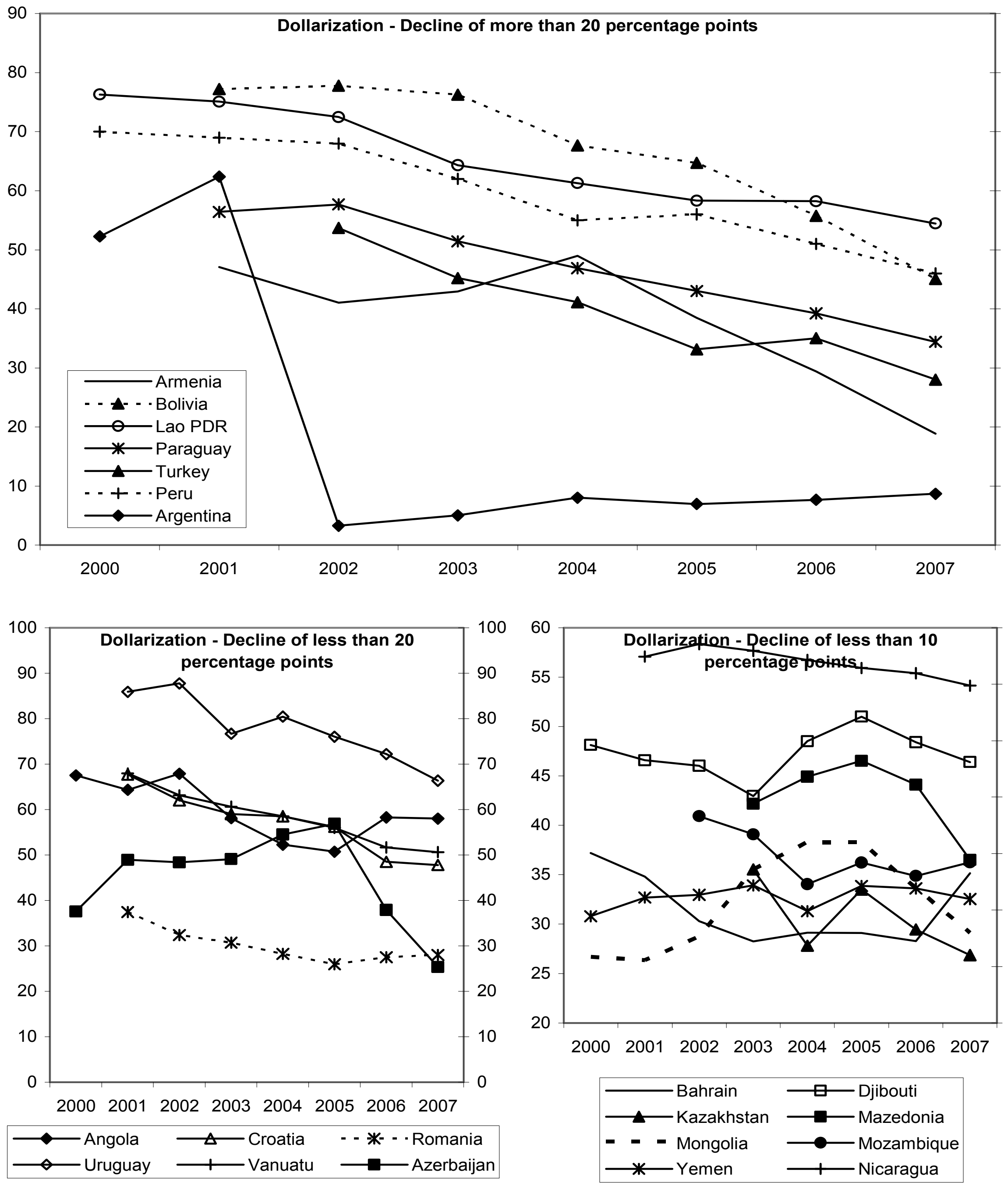




Source: IMF, International Financial Statistics, and own calculations.

while only 1, namely Argentina, satisfies the Reinhart, Rogoff and Savastano criteria of successful dedollarization (see para. 15)(Figure 4). As in the case of Mexico and Pakistan,

Figure 4. Decreases in dollarization: 2000-07



Source: IMF, International Financial Statistics, and own calculations.

dedollarization in Argentina occurred in the face of a severe financial crisis when its currency board became unsustainable, and foreign exchange reserves declined significantly as people moved assets into U.S. dollars. In response, and as part of a comprehensive policy response to stabilize the economy, the government forcibly converted foreign currency deposits into the domestic currency. Most other countries remained highly dollarized at end-2007 with the ratio of FCDs to broad money in excess of 30 percent, although in a few of these countries, i.e. Armenia, Bolivia, Croatia, Lao P.D.R., Paraguay, Peru, Turkey, Uruguay and Vanuatu, the ratio declined by around 20 percentage points during 2000-07. The common denominator in all of these countries is that dedollarization occurred following successful implementation of macroeconomic stabilization policies (sometimes in the context of inflation targeting) that succeeded in reducing inflation, supporting real growth, and nominal appreciation of the domestic currency, as well as policies aimed at strengthening the domestic financial sector. These governments also implemented some measures (as noted in para. 27) to support the demand for the local currency, including requiring higher reserves of foreign exchange deposits, requiring that all consumer credit be extended in the local currency, and prohibiting pricing and cash payments in foreign exchange in the retail sector.

16. **Dollarization is not easily reversed, even after the underlying causes have been removed.** Empirically, this hysteresis has been explained by the expected volatility of the local currency exchange rate and a perceived lack of policy credibility. Baliño, Bennett, and Borensztein (1999) note that reversing dollarization may be difficult because changes in practices regarding the settlement of transactions may be a slow process that depends on institutional changes and takes place only when there are significant benefits to be gained by switching currencies. Evidence suggests that successful dedollarization is usually the outcome of a persistent process of disinflation and stabilization, rather than a main policy objective. Institutional changes that bolster the credibility of sustainable macroeconomic policies, such as an independent central bank with a clear mandate to stabilize prices, can also promote confidence in the domestic currency and thus reduce dollarization.

17. **Dedollarization is facilitated by careful sequencing of policy measures.** Establishing the credibility of macroeconomic policy is a prerequisite to assure economic agents that implementation of sound economic policies is sustainable. However, since building policy credibility may take a long time, certain measures can be implemented to promote dedollarization, whether market-based or forced.

III. Lessons and Policy Options for Liberia

Lessons

18. **High dollarization does not necessarily undermine economic performance.** Dollarization may have benefits when economic agents are concerned about a potentially unstable economy. This may help explain why the majority of highly dollarized countries have chosen not to actively pursue dedollarization, and some have chosen to fully dollarize. Nonetheless, some countries have chosen to pursue dedollarization as a means to make

monetary policy more effective, increase seignorage, and reduce the financial sector's vulnerability to shocks.

19. **Forced dedollarization has had limited success.** While dollarization may have fallen in the short run and was sustained in some cases, countries that tried to force dedollarization experienced financial disintermediation and capital flight. Some chose to reverse their policies some years later to counter the adverse economic consequences. Countries that sustained dedollarization began the process with a degree of dollarization substantially lower than Liberia's.[14] Moreover, they used indexed bonds in their more developed financial markets to induce investors to hold local-currency-denominated assets.

20. **Successful attempts to dedollarize have been market-based and combined a track record of economic stability with micro-based policies to promote use of local currency both for transactions and as a store of value.** Countries where dedollarization was sustained without adverse economic consequences had some characteristics in common:

a. *Track record of macroeconomic stability:* This is a necessary, but not sufficient, condition. Dollarization tends to be persistent; many highly dollarized countries with an extended track record of economic stability did not experience significant reduction in dollarization. Successful dedollarization cases show that, only after an extended period of macroeconomic stability can micro measures help reduce both transaction and financial dollarization without macroeconomic cost.

b. *Financial sector development*: To increase the use of the local currency as a store of value, there needs to be a reasonably well-developed financial sector. Introduction of local currency instruments indexed to inflation or the exchange rate and efficient pricing of risk have helped encourage economic agents in other countries to hold local currency assets even in a highly dollarized environment.

21. **Macroeconomic management in Liberia has improved in the past two to three years, but the previous extended period of poor management may require a longer track record of improved economic policies as a precondition for significant dedollarization.** Moreover, given the extended period of conflict up to 2003, increased confidence in the Liberian dollar may require a longer period of political stability. These factors argue for a very cautious and gradual approach to dedollarization. The level of dollarization in Liberia is currently estimated at over 90 percent, with the Liberian dollar being used only for small transactions and not as a store of value; most deposits and lending to the private sector are in U.S. dollars. Liberia's financial sector is underdeveloped: no issuance of government bonds is planned until domestic debt claims have been fully addressed and a new debt management strategy is in place. Moreover, there is no interest

[14] Dollarization was considerably lower than in Liberia: Mexico started at 25 percent and Pakistan at 40 percent.

rate differential between local currency and foreign currency deposits and loans despite a steady nominal depreciation of the Liberian dollar against the U.S. dollar.

Policy options

22. **Options the authorities could consider are maintaining the status quo, moving to full dollarization, or implementing policies to promote dedollarization.** The option of full dollarization has been covered extensively in the literature, including for the case of Liberia.[15] Although Liberia has been dollarized through most of its history, Honda and Schumacher (2006) conclude that Liberia should not adopt full dollarization since: (i) the benefits of dollarization in terms of enhanced fiscal discipline and faster economic growth are not supported by empirical evidence; (ii) it would increase the Liberian economy's vulnerability to external shocks; (iii) banks in fully dollarized economies face additional capitalization requirements that Liberian banks cannot meet at present; and (iv) it would be costly in terms of real resources lost because of the loss of seigniorage (estimated at about 1 percent of GDP).

23. **Current policy seems to be appropriate for Liberia,** and there does not appear to be an urgent need to change current policies. Because Liberia is at an early stage of recovery following extended political and economic instability, the authorities are advised to consider the potential impact on investor confidence of a change in regime and whether that would be consistent with possible medium-term monetary policy plans, such as joining a monetary union. Liberia is one of six West African nations who in 2000 decided to establish a second monetary union in West Africa, namely the West African Monetary Zone, with the ultimate objective of forming with the CFA Franc Zone, a single monetary union in the region. The introduction of a common currency, originally scheduled for January 2003, has been rescheduled to December 2009.

24. **Despite high dollarization, Liberia's current macroeconomic policies have supported economic stability and a recovery in GDP growth.** This has brought increased donor and investor confidence. A longer track record of good economic policies and reinforcement of the financial market is needed to increase confidence in the Liberian dollar. This is consistent with for instance Ize and Yeyati (2005) who concludes that : "for some countries that are heavily dollarized, are small, have narrow markets and large tradable sectors, and whose central banks have low credibility and/or limited technical resources, a radical policy reform may be too costly to entertain". They conclude that a bimonetary regime in such countries could provide a preferable alternative to full de jure dollarization since it would still allow the central bank to retain seigniorage and provides room for achieving required adjustments in the real exchange rate by adjusting the rate of crawl.

[15] Honda and Schumacher (2006).

25. **Given Liberia's long history as a dual currency regime and the comprehensive nature of dollarization, forced dedollarization with premature removal of legal tender status from the U.S. dollar would be risky and unwarranted.** As noted, dollarization in Liberia is pervasive, and U.S. dollars are being used, not only as a store of value, but also for conducting domestic transactions and the denomination of prices and wages. Countries that have attempted forced dedollarization were either reacting to an adverse shock or implemented policies in a stable economic environment where the local currency was already important to the economy. The approach proved to be very risky, with potential for substantial adverse macroeconomic outcomes.

26. **Should the authorities decide to dedollarize, the staff recommends a cautious approach.** As noted by Kokenyne and Veyrune (2007), the first step toward dedollarization is to reestablish the credibility of macroeconomic policies, particularly monetary policy, before other measures to reverse dedollarization are introduced. In this context, the CBL should therefore focus on credibly reducing and stabilizing inflation. While continuing to reinforce macroeconomic policies and institutions and build financial markets, Liberia could consider policies to promote a gradual market-driven dedollarization if that is consistent with its long-term macroeconomic objectives. Some options to achieve this:

a. *Developing the domestic financial market.* A deep and liquid domestic financial market provides flexible alternative investment opportunities to U.S. dollar deposits. In this regard, introducing domestic currency-denominated securities could contribute to a decrease in U.S. dollar-denominated assets. In the absence of confidence in local currency-denominated assets, a credible indexation system (either to the exchange rate or inflation rate, for example, as in Nicaragua, Chile and Columbia) can enhance investment in such assets.

b. *Improve the quality and increase the denomination of Liberian banknotes.* The largest denomination is currently the equivalent of less than US$2, and the quality of banknotes is very poor, making the local currency difficult to use for most nontrivial transactions — in Cambodia for instance, issuance of larger denominations of riel banknotes increased the demand for the local currency. The main challenge for the government would be funding the cost of new banknotes.

c. *Increase the use of the Liberian dollar as a unit of account.* The law requires that prices in Liberia be denominated in Liberian dollars and that the Liberian dollar should be used for all accounting and financial reporting and official purposes in Liberia.[16] The law is not fully honored. For example, most of the government budget is presented in U.S. dollars. While it may not be practical to fully enforce the law given logistical issues and resource constraints, increased reporting in Liberian

[16] "An Act to Authorize the Establishment of the Central Bank of Liberia," Part V, 19(1).

dollars of official transactions could be a step toward wider use of the Liberian dollar as a unit of account.

d. *Use the Liberian dollar in more government transactions.* Currently 95 percent of revenues are collected in U.S. dollars and 80–85 percent of government expenditures are so denominated, including more than half of civil servant salaries. However, such a shift could pose challenges for macroeconomic management, such as spikes in activity in currency markets at tax time, pressure to protect the real value of wages through indexation, and exposure of the government balance sheet to currency fluctuations.

e. *Encourage agents to hold local-currency-denominated assets.* Currently, Liberian and U.S. dollar bank accounts pay the same interest rate, despite the expectation that there will be a modest nominal depreciation of the Liberian dollar relative to the U.S. dollar over the short to medium term. Since there are no restrictions on interest rates, this phenomenon is probably driven by lack of demand by banks for Liberian currency and a lack of private sector confidence in it as a store of value. This could change over the medium term as financial markets grow and new instruments, such as local-currency-denominated indexed instruments, appear. Prudential regulations that encourage banks to hold LCDs could be considered if they are consistent with promoting financial sector stability.

f. *Modernize prudential regulation.* Measures aimed at ensuring proper management of foreign exchange risk and internalizing the true cost of foreign currency loans can help to open the way for the domestic currency. These include ensuring appropriate capitalization and safeguards for foreign exchange positions, higher liquidity requirements on FCDs, and requiring additional provisions or capital for U.S. dollar loans to the nontradable sector.

g. *Encourage the use of local currency for payments*. Ways to do this include offering more convenient and lower-cost services for domestic currency payments than for payments in foreign currency, imposing limits on foreign currency lending, or requiring additional provisioning or capital for U.S. dollar loans to the nontradable sector. Peru, for example, introduced a 2 percent tax on checks denominated in foreign currency to discourage the use of foreign currency in payments.

h. *Refocusing public debt management toward Liberian-dollar denominated instruments.* Under its current policy framework the government is anchoring fiscal policy on a zero-borrowing rule, but once the environment for a resumption of borrowing has been established, borrowing in the local currency could help to deepen the local currency market.

i. *Administrative measures* such as placing limits on U.S. dollar deposits or loans, and imposing a tax on U.S. dollar intermediation.

j. *Remove the legal tender status of the U.S. dollar.* While a comprehensive plan to promote a significant and sustained dedollarization will likely require a change in the dual currency regime, the timing of the change would need to be studied to reduce potential macroeconomic costs. Given the potential downside risks, this policy change should be carefully communicated to the public as part of a broader agenda to promote dedollarization — a key issue that would need to be considered at the outset is whether the authorities would continue to allow a de facto role for U.S. dollars in the economy since forcing agents to use a currency in which they don't yet have confidence could lead to a risk of disintermediation, or capital flight.

IV. Conclusion

27. **Dollarization that results from a loss of confidence in the local currency after a period of poor macroeconomic management and economic instability is usually very persistent.** The literature on the costs and benefits of dollarization offers no strong evidence that dollarization has a significant impact on economic growth and inflation, but it does suggest that it may increase the financial sector's vulnerability to shocks. While most highly dollarized economies have chosen not to pursue policies to promote dedollarization and others have fully dollarized, some countries have attempted to delink from the dollar in an effort to firm up monetary policy and reduce balance sheet vulnerabilities. Countries that have tried to force dedollarization have experienced adverse macroeconomic effects; in some cases they have had to reverse policies several years later when there was no sustained fall in dollarization. Those countries that have experienced sustained dedollarization with no significant economic costs have pursued a market-based approach that combines an extended period of economic stability with micro measures to encourage economic agents to hold the local currency both for transaction purposes and as a store of value.

28. **A change in current monetary policy does not appear to be a priority.** Liberia has had a dollarized economy since it was established in 1847. This has been institutionalized in a dual currency regime. After an extended period of economic and political instability, economic performance is improving: growth has steadily increased, inflation has remained in the low double digits, and the exchange rate has been relatively stable.

29. **While current macroeconomic policy has served Liberia well so far, cross-country experience with dedollarization offers some lessons for Liberia should the authorities consider policies to dedollarize.** Once it has established a track record of economic and political stability, Liberia could consider micro measures to encourage lending in local currency and the purchase of local currency assets. The legal tender status of the U.S. dollar could be withdrawn if that would not weaken financial sector stability or cause capital flight. Effective communication of a policy strategy that recognizes that dedollarization is a gradual market-driven process will increase the probability of achieving sustained dedollarization without adverse macroeconomic consequences.

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Appendix I. Estimating the Degree of Dollarization in Liberia

1. **Choosing the appropriate measure of the level of dollarization is usually limited by the availability of data on the amount of foreign currency circulating in the economy.** Common measures of dollarization employed in cross-country studies are various ratios that use combinations of foreign currency deposits (FCD), foreign currency in circulation (FCC), local currency deposits (LCD), and local currency in circulation (LCC). Of these variables, FCC is the most difficult to measure and is thus left out of most measures of dollarization.[17] Measures commonly used are:

DR1= FCD/LCD

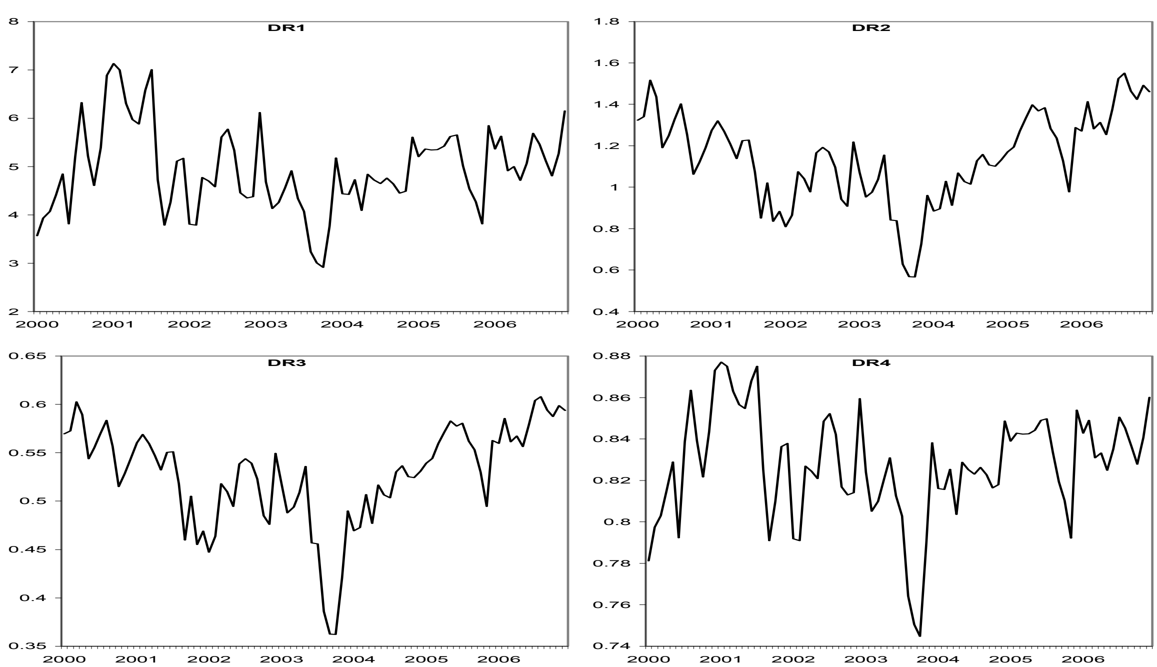
DR2 = FCD/(LCC + LCD)

DR3 = FCD/(FCD + LCD + LCC)

DR4 = FCD/(FCD + LCD)

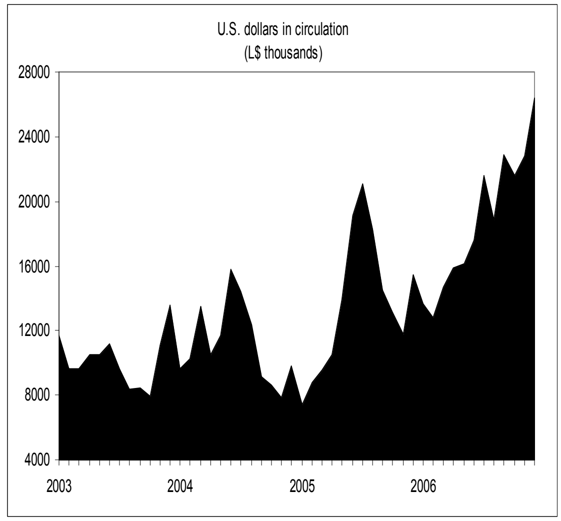
2. **Recent trends suggest that dollarization has been increasing in Liberia since 2003 (Figure 1).**[18]

Figure 1: Dollarization in Liberia



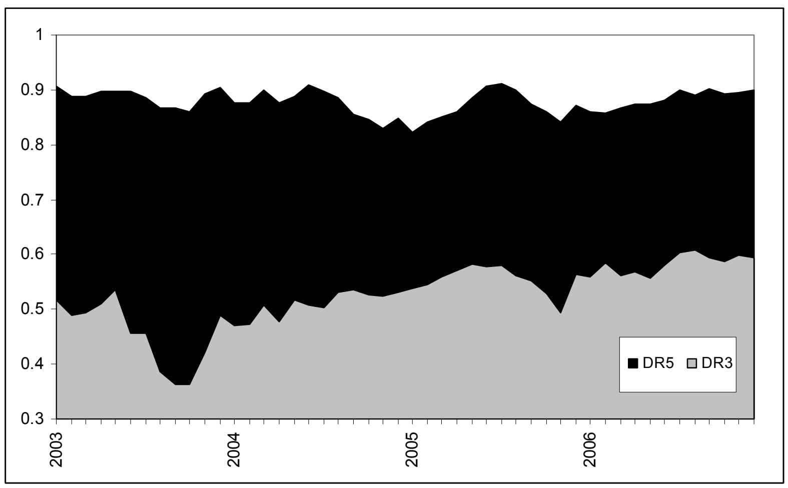
[17] Baliño, Bennett, and Borensztein (1999), using U.S. Treasury data, report that in 1989–96, net dollar inflows into a number of small open economies represented three to four times the amount of local currency in circulation.

[18] The series were detrended using an HP filter.



3. **The standard measures may not be the best proxies for the level of dollarization in Liberia.** Informal estimates and anecdotal evidence suggest that the amount of U.S. dollars in Liberia may be substantial. Thus, measuring the true level of dollarization would require an estimate of FCC, which is difficult.[19] To construct a broad measure of the money supply we estimate U.S. dollars in circulation in Liberia by assuming that the money multiplier for the U.S. dollar component of broad money is equal to that for the Liberian dollar component, DR5 = (FCD+FCC)/(FCD+FCC+LCD+LCC).[20] According to this measure, the amount of U.S. dollars in circulation has approximately tripled since 2003 to an estimated L$28 billion at the end of 2007—about nine times higher than Liberian dollars in circulation.

4. **Using DR5 confirms that Liberia is highly dollarized.** The ratio of U.S. dollar deposits and currency in circulation to the effective money supply averages 90 percent. However, it suggests that the increasing trend in dollarization implied by standard measures of dollarization may reflect increasing confidence in the economy and financial sector since the political situation in Liberia has been normalized and macroeconomic policy implementation has improved, both of which have encouraged a return of deposits to the banking system.[21]



[19] Some studies use data based on information from U.S. Customs, which requires reporting of private currency shipments of US$10,000 and above, and official currency shipments by the U.S. Federal Reserve Bank – however, this information is not readily available for Liberia.

[20] The proposed approach is derived from the discussion of the role of foreign currency in the multiple deposit creation process in Iossifov, 1997.

[21] Zamaroczy and Sa (2003) found a similar trend in Cambodia as confidence in the banking system rose.

Attachment 1. Estimating US Dollars in Circulation

$M^{L\$} = C^{L\$} + D^{L\$}$

$M^{L\$}$: the Liberian dollar component of money supply (M2)

$C^{L\$}$: Liberian dollars outside banks

$D^{L\$}$: demand and time deposits in Liberian dollars

$B^{L\$} = C^{L\$} + RR^{L\$} + ER^{L\$}$

$B^{L\$}$: Liberian dollar value of monetary base

$Multiplier^{L\$} = M^{L\$}/B^{L\$}$, money multiplier for the Liberian dollar component of M2

$M^{\$} = C^{\$} + D^{\$}$

$M^{\$}$: the US dollar component of money supply (M2)

$C^{\$}$: U.S. dollars outside banks

$D^{\$}$: demand and time deposits in US dollars

$B^{\$} = C^{\$} + RR^{\$} + ER^{\$}$

$B^{\$}$: U.S. dollar value of monetary base

$Multiplier^{\$} = M^{\$}/B^{\$}$, money multiplier for the US dollar component of M2

Assuming that both U.S. and Liberian dollar component of M2 have the same money multiplier, we extrapolate U.S. dollars in circulation ($C^{\$}$).