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Making Monetary Policy More Effective: The Case of the Democratic Republic of the Congo

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African Department

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Abstract

The paper looks at the challenges of conducting monetary policy in a context of high dollarization of the banking system and weak institutions in the Democratic Republic of the Congo. The empirical analysis confirms the limited effectiveness of the Central Bank of Congo in controlling inflation, despite a rapid policy response to inflation shocks. Options available to enhance the effectiveness of monetary policy are limited. After exploring the pros and cons of different exchange regimes we conclude that strengthening the current monetary policy framework remains the first-best option, given the country's exposure to frequent terms-of-trade shocks.

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**MAKING MONETARY POLICY MORE EFFECTIVE:
THE CASE OF THE DEMOCRATIC REPUBLIC OF THE CONGO**

I. INTRODUCTION

1. After many years of armed conflict and economic mismanagement, the Democratic Republic of the Congo (DRC) experienced robust growth and relative macroeconomic stability in recent years. In 2003–11, real GDP growth averaged 6.2 percent a year, compared with an average annual contraction of -4.5 percent between 1991 and 2002. The nominal exchange rate has stabilized and helped inflation trend downward toward single digits, after many years of high and variable (including hyper) inflation. Prudent macroeconomic policies and ongoing structural reforms have underpinned better economic performance. In particular, the government has significantly improved public financial management (PFM) and reined in public spending by anchoring fiscal policy to the objective of eliminating (net) financing of the budget deficit from the Central Bank of the Congo (BCC). The BCC has also made improvements to its monetary instruments, enhanced its institutional and administrative capacity, and rebuilt its international reserves. Notwithstanding these achievements, the pursuit of low and stable inflation remains a challenge for the DRC authorities with inflation rates that until recently remained highly volatile and above those of its main trading partners.

2. A number of factors that appear to limit the effectiveness of the BCC in conducting monetary policy in the DRC are explored in this paper. They include a high level of dollarization of the DRC banking system and weaknesses in the BCC as an institution, stemming, in part, from its lack of independence and poor financial position (i.e., negative net worth).

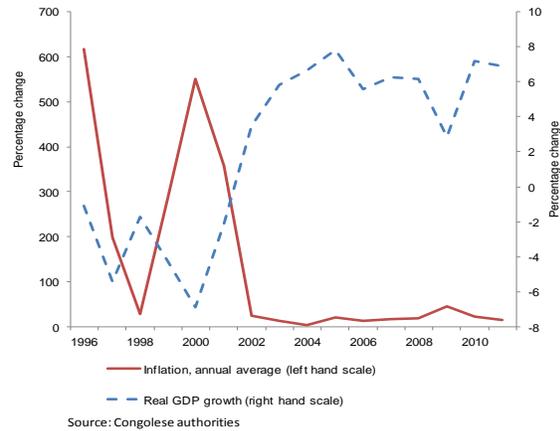
3. Section II of the paper looks at the country-specific background against which the current monetary policy framework (MPF) must be assessed and an empirical analysis of the effectiveness of the BCC in controlling inflation. Section III discusses the constraints the BCC faces in conducting monetary policy, including the limitations of operating in a small open economy with a weak track record and low credibility. Section IV highlights the options available to the DRC authorities to enhance the efficacy of monetary policy, including hard pegs through complete dollarization or a fixed exchange rate regime. Section V concludes the analysis and proposes that the authorities pursue reforms to strengthen the current MPF as the first-best option.

II. BACKGROUND

A. Some Stylized Facts

4. Recent years have seen a dramatic decline in inflation, accompanied by a strong rebound in economic growth (Figure 1). In 1970–90, annual inflation averaged 50 percent, with episodes of hyperinflation during the 1990s, mostly driven by BCC financing of the central government fiscal deficit. Average annual real GDP growth was 0.7 percent in the same period, significantly below the population growth rate.

Figure 1. Real GDP Growth and Inflation 1996–2012



5. The decline in inflation to about 10–15 percent a year during the past several years and to single digit numbers in 2012 is primarily due to better public financial management, fiscal consolidation and the gradual elimination of BCC financing of the central government deficit, and improved coordination between the treasury and the BCC.

Indeed, the central government's (cash) deficit has been halved in the past several years: in 2001–11 the fiscal deficit averaged 4.3 percent of GDP, compared to an average of 8.5 percent for 1970–2000. Increased reliance on market-based policy instruments and improved liquidity forecasts allowed the BCC to contain the main monetary aggregates at levels consistent with its single-digit inflation objective. In recent years, broad money growth converged with nominal GDP growth, velocity initially declined (before it stabilized), and the money multiplier increased despite higher reserve requirements, suggesting improved confidence and some financial deepening (Figure 2).

Figure 2. Development of Monetary Aggregates, 2006–2012
(Percentages)

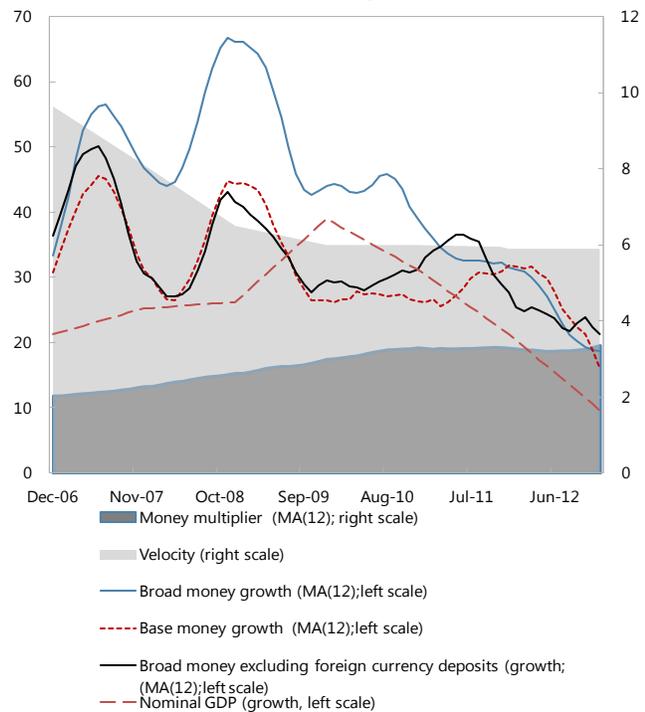
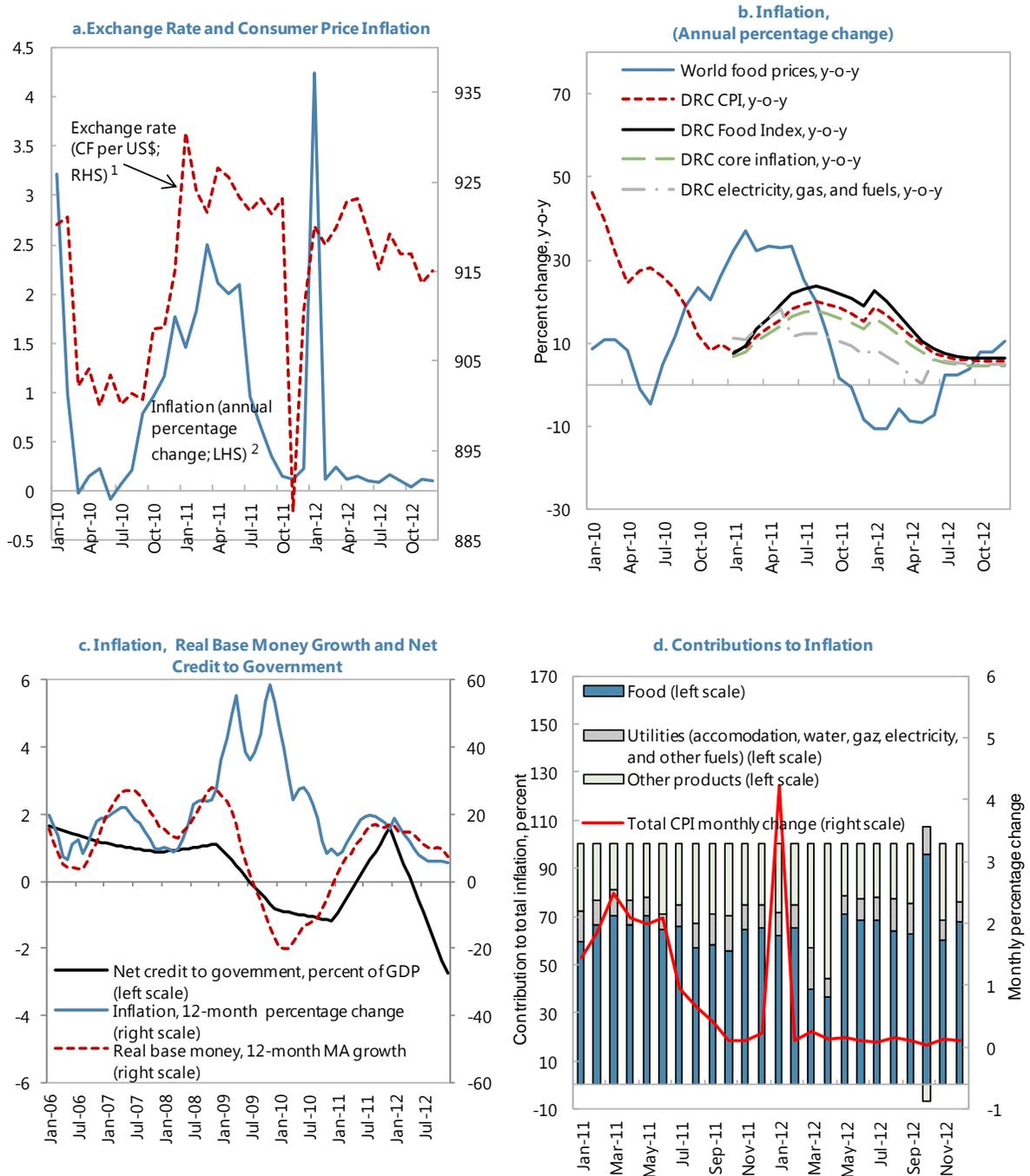


Figure 3. Price Developments



Sources: Congolese authorities; and IMF staff estimates.

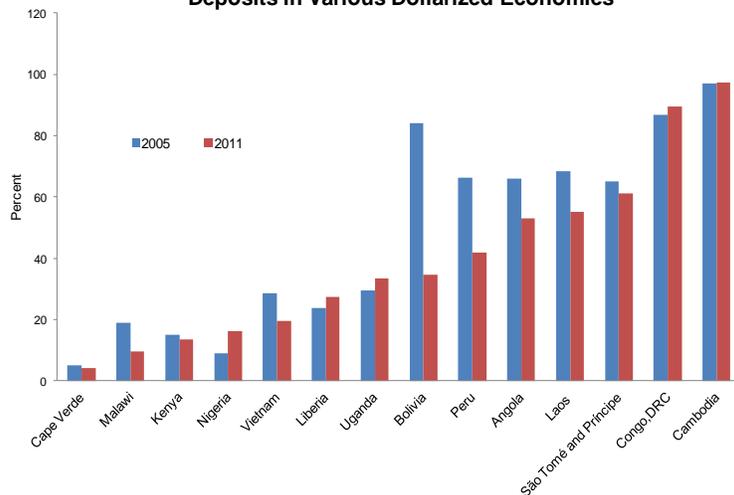
¹ The abrupt change in the exchange rate in late 2011 was to a large extent related to an exceptional change in the supply and demand of dollars in the local market in the context of national elections.

² The temporary increase in the inflation in January 2012 was due to the incorrect application by many traders of the new VAT, which was later corrected.

6. Given the improved fiscal discipline in recent years, inflation has been primarily influenced by the exchange rate (Figure 3a) and by exogenous factors such as imported food and fuel prices (Figure 3b), rather than by central bank financing of the fiscal deficit (Figure 3c).¹ In periods of exchange rate stability, food prices have been the main determinant of inflation (Figure 3d). Indeed, the available Consumer Price Index (CPI) data covers Kinshasa, where the share of imported goods is highest,² thus the dominant impact of exchange rate variations on inflation. Furthermore, food has a high weight (54 percent) in the CPI (Figure 3d). Utilities, including fuel, are also largely imported and bear a weight of 12 percent in the CPI. Overall and core inflation move largely together because food items also have a high weight in core inflation (Figure 3b).

7. Although inflation has slowed, it remains volatile. Since 2000–03, the weekly inflation volatility index has sharply declined, from more than 2.9 (that is, the weekly inflation standard deviation was almost three times its average) to 1.4 in 2009–12, while the weekly average inflation stabilized at about 0.2 percent between 2010 and 2011.³ Many years of high inflation and episodes of exchange rate crisis resulted in a rapid dollarization of the economy and, in particular, the financial system. However, because most of the population has no choice but to use the local currency for their current transactions, this provides some scope for monetary policy. Dollarization started from relatively low base in the 1970s and accelerated in tandem with rising inflation rates during the 1990s (Ngonga Nzinga and Ulimwengu, 1998). More recently, U.S. dollar deposits as a share of total deposits have hovered around 90 percent (equivalent to 70 percent as a share of broad money), which is high when compared with other highly dollarized economies (Figure 4).

Figure 4. Foreign Currency Deposits as Share of Total Deposits in Various Dollarized Economies



Sources: IMF country desk economists.

¹ Detailed monetary data is available from 2006 onward.

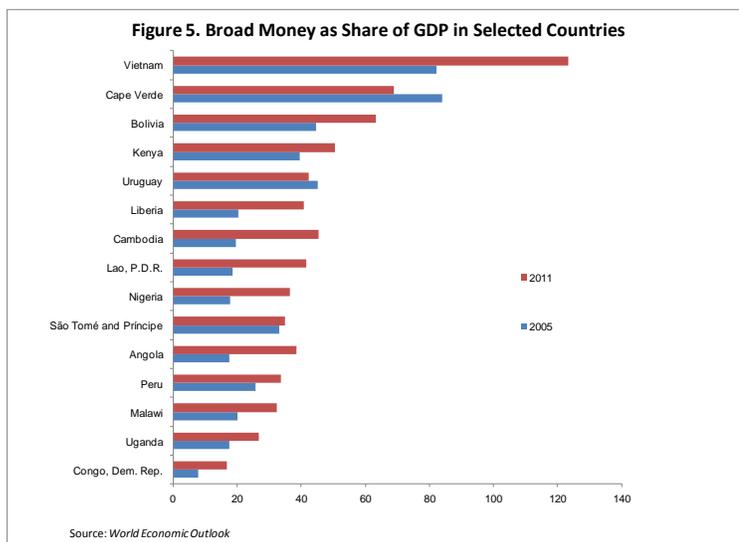
² No data is available on the share of imports in food consumption.

³ The weekly average inflation has increased from 0.21 percent in 2003–05 to 0.33 in 2006–08 and 0.41 percent in 2009–12. The outlier was 2009, given the crisis. If the outlier year 2009 is excluded, the average weekly inflation rate is 0.2 percent and the volatility 1.3.

Yet, with GDP per capita equivalent to only US\$0.4 a day and U.S. dollar bills below US\$10 hardly accepted in day-to-day transactions, the local currency does remain an essential means for current transactions for most of the population.

8. Despite the emergence of a large number of commercial banks in recent years, the financial sector remains marginal and underdeveloped.⁴ Less than 1 percent of the population has access to a commercial bank, and only 7 percent of commercial enterprises use banks to finance their investments.⁵ The monetization of the DRC

economy is also very low by international comparison. Broad money represents less than 17 percent of GDP, compared with an average of about 46 percent in sub-Saharan Africa (SSA) (Figure 5). A weak regulatory and judicial system inhibits the use of collateral, forcing commercial banks to rely on a limited number of trusted companies and individuals, with self-financing remaining the main source for investment for many companies and



and individuals. Investment in the mining sector (and the natural resource sector more generally) is financed mostly in international markets, and only about 6 percent of private-sector credit goes to the mining sector. Maturity mismatch between deposits and loans and the lack of long-term saving instruments limit commercial banks' ability to finance large investment, with syndicated loans almost nonexistent. There is no capital market, and the money market (which accounts for less than 1 percent of GDP) consists essentially of central bank treasury bills, with only limited interbank lending.⁶

⁴ As of December 31, 2011, there were 20 commercial banks in the DRC, of which 15 were established after 1998. Fifteen licensed foreign-exchange bureaus had an average daily turnover in the spot market of about US\$7–8 million. The interbank foreign exchange market is operational but not active. Exchange market participants may engage in spot and forward operations, but in 2011 none occurred.

⁵ See World Development Indicators at http://data.worldbank.org/country/congo-dem-rep#cp_wdi.

⁶ On average a bank turns once every two weeks to the interbank market. The daily volume of interbank market activities is 0.01 percent of GDP.

B. The Current Monetary Policy Framework

9. The primary objective of the BCC is price stability.⁷ Despite the high degree of dollarization, the BCC's intermediate monetary target is base money. In implementing monetary policy, the BCC sets out a path for the growth of the money supply consistent with its inflation objective and the projection for economic growth. Money growth is broken down into weekly targets revised weekly by the BCC according to updated money demand projections (Box 1). If projected short-term money growth deviates from the programmed path, the BCC intervenes by injecting or absorbing liquidity through the purchase/sale of central bank bills.

Box 1. The BCC's Procedures for Estimating Money Demand

The BCC defined its recent monetary policy framework, targets, and instruments in a toolkit that was established in 2009.¹ The toolkit also sets out a framework to help BCC staff analyze the transmission mechanism, the nature of shocks or other factors affecting monetary fluctuations, and their expected impact on the monetary objectives. The role of the monetary authority is to monitor and forecast economic cycles, identify changes in money demand, and provide a policy response through the appropriate monetary policy instruments. The framework includes a methodology for estimating money demand.

Operationally, at the start of each week, the BCC estimates the extent of its weekly interventions based on the difference between the monetary programming exercise, and the projected balance sheet of the BCC. The staff of the BCC (operating under a technical subcommittee responsible for liquidity forecasting) considers a number of factors that affect the balance sheet, most of which are exogenous, including treasury cash flows, refinancing needs of commercial banks, movements in other items net, the position vis-à-vis the Bank for International Settlement (BIS), and the cash balance in foreign exchange as well as projected use of foreign exchange in the coming week. This subcommittee's projections on government expenditure and revenue are discussed and fine-tuned in coordination with the staff of the treasury.

¹See Nganga Nzinga, Vincent (March 2011) *Boite A Outils de la Politique Monétaire de la Banque Centrale du Congo*.

²See *Ordre de Service No 007/10* that regulates the structure and functioning of the Technical Subcommittee of the Liquidity Forecasting.

10. The BCC's monetary policy instrument is the policy rate. The BCC changes its policy rate to respond to perceived permanent monetary shocks. By increasing the interest rate, the BCC intends to increase the attractiveness of assets in local currency, reducing liquidity in the system. During times of double-digit inflation, the BCC typically targeted a real policy rate of about 10 percent. As inflation is on a declining trend, the targeted positivity is lower. The BCC estimates a time lag of two to three months for a change in the policy rate to affect money demand. The clearinghouse operates in local currency only, forcing banks to hold sufficient amounts of the local currency to avoid seeking funding from the BCC at a rate 2 percent above the policy rate to meet their legal reserve requirements.

⁷ See Article 3 of the central bank law (*Loi N°005/2002 du 07 Mai 2002 relative à la constitution, à l'organisation et au fonctionnement de la Banque Centrale du Congo*). Article 6 mentions, as a secondary objective the "internal and external stability of the local currency." In practice, the central bank interprets this as a floating exchange rate regime with interventions aimed at minimizing exchange rate volatility.

11. Under the central bank operational framework, the source and the duration of the deviation from the programmed path of money should determine the type of monetary intervention, guided by a calibration table that links the adequate monetary instrument for each type of autonomous money demand shock:

- **Treasury bills (BTRs) auctions:** Weekly auctions of BTRs,⁸ currently with maturities of 9 and 28 days, are the main market-based instrument to respond to temporary monetary shocks, such as a sudden spike in government expenditure or excess reserves in commercial banks. The BCC announces a range of BTR volumes it plans to issue in the following week, with participants allowed to bid up to the policy rate.⁹ The BTR rate is also reported to be used as a benchmark rate in the interbank market.
- **Foreign exchange interventions:** According to the current framework, foreign exchange interventions should be aimed at smoothing out exchange rate fluctuations, correcting for foreign exchange market imperfections¹⁰ and achieving the BCC's international reserves target to cushion against exogenous balance of payments shocks. Sterilization should be carried out as needed to offset any impact on the money supply.¹¹ *De facto*, the exchange rate has been remarkably stable over the past few years, prompting the IMF to reclassify the *de facto* exchange rate regime as different types of managed arrangements since 2010.¹²

⁸ Auctions are held every Wednesday. The BCC announces the amount of BTRs to be auctioned, and commercial banks can submit multiple bids at varying prices by 1 p.m. Offers are ranked from the lowest to the highest interest rate offered and sold to the lowest bidders up to the amount of BTRs offered by the BCC. BTRs are remunerated at the interest rate offered by banks. The BCC subsequently publishes the minimum, maximum, and weighted average of the accepted bids.

⁹ The BCC's regulation No 009/10 on the Structure and Functioning of the Treasury Bills Adjudication Committee (*Comité d'Adjudication des Billets de Trésorerie, CAB*) stipulates the role of the CAB in organizing auctions. Auction details have to be published through public "avis" (announcements), and the auction's amounts and weighted interest rates communicated to the participants in the auction.

¹⁰ The BCC intervenes in the foreign exchange market (where about 90 percent of the foreign reserves are exchanged) when the official exchange rate deviates by more than 1½ percent from the parallel market rate for a period of at least 10 days.

¹¹ The BCC sells U.S. dollars on a "need to do" basis through U.S. dollars auctions on any working day of the week. Dollar purchases by the BCC are negotiated directly with banks (without auctions), a practice that should be discouraged because it may result in Multiple Currency Practice and has undesirable implications for market development, hindering market liquidity and price discovery mechanisms. This practice also adversely affects transparency of the central bank operations, hampering competition in the banking sector by boosting market power of a few chosen banks, and—in the longer term—impeding central bank's credibility.

¹² The IMF Annual Report on Exchange Arrangements and Exchange Restrictions classified the DRC exchange rate regime as "Crawl-like arrangement" in 2010 and as "Other managed arrangement" in 2011.

- **Changes in commercial banks’ reserve requirements:** This instrument is rarely used. Required reserves are not remunerated and are held in local currency, even though they also apply to dollar-denominated deposits, limiting the capacity for banks to accept large dollar-denominated deposits.¹³

C. Assessing the Efficacy of Monetary Policy

12. Under the current framework, the main instrument to respond to monetary shock and deviation from the inflation objective is the variation of base money induced by changes in the policy rate. This section assesses whether the policy rate is an effective instrument and has an impact on the inflation rate. In a two-stage approach, we first, identify the key determinants of inflation. Next, we estimate the policy response (function) to inflation shocks assumed to be the residual of the inflation equation. We determine how effective that policy response is. Our empirical assessment is somewhat ambitious and should be interpreted with caution, given the paucity of data for the DRC, small sample size, and structural breaks (including domestic conflict) that hamper the time series. In addition, the lack of monthly or quarterly output data and the very marginal use of the interbank market seriously limit the range of modeling options—in particular for estimating a money-demand function.

13. The sample consists of six variables for which monthly data is available in 2002 through 2012. The variables include the monetary base (M1), nominal exchange rate, the BCC’s policy interest rate, the CPI, and food and world oil prices. All variables have a unit root (using the Augmented Dickey-Fuller or Phillips-Perron test). We test for the existence of a cointegrating vector, using the Johansen (1988) procedure,¹⁴ assuming as endogenous variables the price level, base money, and the exchange rate.

Key Determinants of Inflation

14. A long-run relationship exists between three endogenous variables: the CPI, the monetary base, and the nominal exchange rate. In the long run, the price level is essentially driven by the nominal exchange rate—as expected given the high dollarization of the DRC economy—and base money. The long run elasticity of prices to the nominal exchange rate and the monetary base are significant and respectively are 0.80 and 0.31. The exchange rate coefficient confirms the analysis that the exchange rate has been the main driver of the price index— a by-product of the high dollarization—and a major constraint in the conduct of monetary policy.

¹³ The DRC authorities recognize that it goes against best practice to remunerate legal reserves at less than market rates, or not at all, because it results in a tax on banks.

¹⁴ We set the lag of the VAR at 6—a selection validated by 3 out of 5 lag order selection criteria. The unrestricted cointegration rank tests (Trace and Eigenvalue) indicate the existence of one cointegrating vector 0.05.

15. The short-term dynamics of the model are summarized in Table 1. Contrary to the observations made earlier and despite the heavy weight of food in the CPI basket,¹⁵ the model shows no significant impact of world food prices on inflation. However, international oil prices significantly affect inflation with a long lag, but with the wrong sign. This counter-intuitive finding is consistent with the history of government-controlled fuel prices. Changes in the policy rate are significant at lags beyond six months, with the expected sign suggesting a slower transmission mechanism from the policy rate to inflation than the one estimated by the BCC, which estimates a lag of one quarter.

Table 1: Vector Error Correction Estimates

Cointegrating Equation			
LCPI(-1)	1		
LBM(-1)	-0.31		
	[-6.04]		
LEXCA(-1)	-0.8		
	[-5.88]		
C	3.91		
Error Correction :	D(LCPI)	D(LBM)	D(LEXCA)
Cointegration eq.	-0.072	-0.059	-0.011
	[-3.52]	[-0.73]	[-0.23]
D(LDRATE(-6))	-0.006	0.012	-0.008
	[-1.40]	[0.68]	[-0.74]
D(LDRATE(-8))	-0.008	-0.021	-0.038
	[-1.80]	[-1.15]	[-3.52]
D(LOILP(-11))	-0.037	-0.022	-0.053
	[-2.68]	[-0.39]	[-1.63]
R-squared	0.52	0.22	0.28
Adj. R-squared	0.43	0.09	0.16

¹ The coefficients of the lagged endogenous variables are not shown.

² Statistically non-significant lags of the exogenous variables have been excluded from the regression.

³ [] indicates t-statistics.

⁴ LCPI, LBM, LEXCA, LDRATE and LOILP are respectively the log value of the Consumer Price Index, monetary base, nominal exchange rate, policy rate; and world oil price.

¹⁵ The total weight of *food products and non-alcoholic drinks* in the overall CPI is 54 percent. There is no breakdown between imported and locally produced food. The second largest subcomponent in the CPI is *Accommodation, water, gas, electricity and other fuels* with a total weight of 12 percent (of which gas, electricity, and other fuels are 3 percent). The third largest subcomponent is transports with a weight of 8 percent.

Policy Response to Inflation Shocks

16. To address the question of how quickly the authorities respond to a shock on inflation, we regress changes in the policy rate to the residuals of the error correction equation for inflation (RESID01), which can be interpreted as inflation shocks. Using the Wald test to restrict the numbers of lagged inflation shocks (from a maximum of 12 months), the results show that the policy rate is adjusted upward with a lag of one month (Table 2 (a)). This suggests a quick policy, although reactive rather than proactive, response to inflation shocks.

Table 2 : Policy Response to Inflation Shocks and Deviation from the cointegration equation

(a)		(b)	
Inflation Shocks		Deviation from Cointegrating Equation (Price Shocks)	
RESID01(-1)	3.25	DEVIATION(-1)	-1.21
	[2.09]		[-3.65]
RESID01(-4)	-1.89	DEVIATION(-7)	-1.21
	[-1.23]		[-2.63]
RESID01(-9)	-2.42	DEVIATION(-8)	2.48
	[-1.58]		[5.38]
Constant	0	DEVIATION(-10)	-1.53
			[-4.98]
		DEVIATION(-11)	2.35
			[6.49]
		DEVIATION(-12)	-1.5
			[-6.43]
		Constant	-0.01
R-squared	0.07		0.38
Durbin-Watson	1.82		2.01

¹ RESID01 are the residuals from the inflation equation in Table 1.

² DEVIATION represents deviatons from the long-run cointegrating vector.

How Effective Is the Policy Response?

17. The first step of an interest rate transmission channel is the pass-through from the policy rate to other interest rates in the economy, in particular the lending rate. Preliminary tests suggest the lending rate is not responsive to the policy rate—probably the consequence

of the high dollarization in the economy and the widespread use of lending in foreign exchange. This weakens the monetary transmission mechanism.

18. A second link is between the policy rate and the monetary base. We are not able to identify causality between the policy interest rate and the monetary base. This could be a result of data limitations or a result of the limited development of the banking sector, with the majority of the population—the main holders of the domestic currency—being excluded from formal financial services. It could be that the BTR rate, and not the policy interest rate, has a more direct link to the monetary base. Considered risk free, the treasury bills could be the base rate used by banks for their lending rate to more risky private borrowers. A more detailed assessment of the effectiveness of the policy response to control inflation would require richer information, including monthly treasury operations and output data and commercial banks' portfolio allocations between dollar and CDF denominated assets.

19. The main conclusions of this analysis show that (i) the high dollarization of the economy is reflected in the long-run relationship estimated in this section; this represents significant constraint; (ii) the central bank has been responsive to inflation shocks, using the policy rate to stem price increases—however the analysis suggests that the instrument, if effective, takes at least six to eight months to have an impact on inflation; (iii) the transmission mechanism is not clear as preliminary analyses suggest the pass-through from the policy rate to other interest rates in the economy is weak.

III. MONETARY POLICY CONSTRAINTS

20. A number of factors contribute to the limited effectiveness of monetary policy in the DRC: the high level of dollarization, the lack of a well-functioning money market, institutional and administrative weaknesses, fiscal dominance, and the lack of capacity and credibility of the monetary authorities.

21. The high level of dollarization is problematic because it limits the reach of the BCC's policy instruments (see also some wider considerations from the literature on dollarization, Box 2):

- The dominant sectors of the economy (export-oriented industries of which extractive industries account for 98 percent of total exports) and financial services are largely immune to exchange rate fluctuations,¹⁶ and the BCC's policy interest rate does little to alter borrowing decisions, which are mostly in U.S. dollars. For these players, with exports and inputs mostly traded offshore in U.S. dollars, the policy interest rate mainly influences their decisions between holding reserves in local currency and foreign exchange. Mostly capital intensive, their share of wages paid in local currency

¹⁶ Note that commercial banks are subject to net open position (NOP) limits. Foreign exchange risk may, however, exist through the credit risk in cases where dollar loans are extended to clients with revenue in local currency. The impact on banks' reserve requirements is an important exception, because banks are required to hold their reserve requirements in local currency.

is not a significant factor; and their real sector linkages are limited. Inward-looking industries (telecom, beverage) market their output in local currency, while most of their inputs are in foreign currency. This makes them vulnerable to exchange rate fluctuations but not monetary policy in itself.¹⁷

- The local-currency formal economy is also relatively small and is dominated by the public sector. Consequently, the fiscal stance has a disproportionately large influence on monetary developments, and fiscal policy is outside the control of the BCC.
- All these factors may contribute to the weak transmission mechanism observed in the data and suggested by our empirical analysis.

Box 2. Dollarization: Broader Considerations from the Literature

Dollarization is often a rational response of economic agents to political and economic instability. As such, it generally occurs when the local currency ceases to offer a reliable reserve value, a convenient means of payment (and a unit of account), or does so more poorly than alternative currencies (Kokenyne, Ley, and Veyrune, 2010). In this context, the process of dollarization is not altogether negative. In a postconflict situation with macroeconomic instability, for example, dollarization could help stabilize and remonetize the economy more quickly than the local currency could. Dollarization might also signal increasing integration in the global economy (Balino, Bennett, and Borensztein, 1999). Nonetheless, dollarization does pose challenges, especially when it occurs on a large scale:

- A small share of domestic currency in base money limits the effectiveness of monetary policy in controlling growth of the monetary aggregates that include foreign currencies (M1, M2, M3).
- The small share of local currency in M3 implies a loss of seignorage revenue.
- The dominance of the dollar in setting domestic prices leads to the loss of an effective exchange rate policy. As prices are widely set in the dominant foreign currency, a depreciation of the domestic currency would lead to higher inflation, keeping the real exchange rate largely unchanged.
- Partial dollarization increases the risk of asset and liability mismatches (currency risk) or risks owing to banks lending in dollars to clients whose earnings are in local currency (portfolio risk).
- High dollarization limits the central bank's ability to act as a lender of last resort. While the central bank can provide emergency liquidity support in local currency, its ability to do so in foreign currency is limited to its available international reserves.
- Dual currencies in an economy lead to higher transaction costs and reduced efficiency of the payments system (foreign bank notes may not be adapted to the local business).
- Currency substitution and speculative arbitrage may increase the volatility of the exchange rate.

22. Besides constraining monetary policy, it should also be noted that the high level of dollarization limits the BCC's ability to act as a lender of last resort. High dollarization calls for higher international reserves for the central bank's lender of last resort facility in the event of a sudden run on a bank's dollar deposits. Currently, dollar deposits in the banking

¹⁷ To avoid foreign exchange risk, some companies such as those in the telecom area, invoice in local currency only as long as the company is in need of domestic currency for inputs and tax payments. Once their demand in local currency is met, the company offers the possibility of paying invoices in U.S. dollars at a favorable exchange rate for their customers.

system are 134 percent of gross international reserves¹⁸ and 87 percent of total deposits. In the same vein, there is a risk of non-performing loans (NPLs) stemming from exchange rate depreciation from debtors of loans in U.S. dollars who receive earnings in Congolese francs.

23. The typical monetary transmission mechanism from monetary interventions to the interbank market and to the credit market is hindered by the lack of a well-functioning money market and financial exclusion of the bulk of the population:

- The limited depth and liquidity of the interbank money market prevents the banking system from effectively transmitting monetary impulses to financial markets. Well-functioning money markets, foreign exchange markets, and secondary markets for securities are important factors in the transmission of monetary policy to the economy. They ensure the distribution of liquidity between financial institutions in excess and in need of liquidity, and they set the price for liquidity, which then affects the credit market.
- Financial fragmentation impairs capacity to influence money supply through market-based instruments—i.e., the banks’ creation of money through their lending activities. Three quarters of the money supply (M1) is in the form of cash held by the population without access to the formal banking system. While the general population’s holdings in domestic currency may be sensitive to changes in the exchange rate, and indeed our empirical analysis shows that price levels are to a large extent determined by the exchange rate, they are insensitive to changes in interest rates because they are excluded from the banking system.

24. Institutional and administrative weaknesses of the monetary authority inhibit policy implementation:

- The BCC’s limited independence leads to multiple and conflicting objectives. Although the BCC scores relatively well on measures of *de jure* central bank independence,¹⁹ operationally its independence is restricted and at times, faces interference from the government. The poor financial position of the BCC is an important element; at present, the BCC has negative net worth and continues to

¹⁸ The extent to which the central bank needs to increase its reserves for this purpose will partly depend on the extent to which the commercial banks can draw down on their own international reserves in the event of a sharp decrease in deposits. Including banks’ own international reserves, the ratio is 79 percent (December 2012).

¹⁹ The Cukierman, Webb, and Neyapti (1992) index (CWN) is the most widely used indicator of central bank independence in the empirical literature. The indicator ranges between 0 (smallest level of independence) and 1 (highest level of independence). Of 22 SSA countries where data is available for 1995–2004 Lucotte (2009) gets a CWN average for SSA of 0.53 compared to 0.59 for the DRC. Using the extended CWN indicator, Canales-Kriljenko and others (2010) find a score for the DRC (0.80) also higher than the average for Latin American countries (0.75) and only a little below the average for Brazil, Chile, Colombia, Mexico, and Peru (0.86).

accumulate losses on its administrative and monetary policy operations. These losses must be (eventually) financed by the government, which gives it political leverage over the monetary authority. Since end-2012 the government has been imposing a budget constraint on the BCC that has resulted in monetary policy decisions primarily motivated to cut costs. Also, regrettably, progress in recapitalizing and restructuring the BCC has been slower than expected and more recently some reforms were reversed (Box 3).

- The BCC monetary policy interventions react to inflation developments in Kinshasa, rather than to price developments of the entire Congolese territory. Until mid-2012 inflation data used by the monetary authorities covered only Kinshasa. As capacities at the National Institute of Statistics (INS) were strengthened, and in line with best practice, the responsibility for the compilation of inflation data and its coverage was shifted in mid-2012 from the BCC to the INS, and a new CPI index now covers five main cities.
 - Although recent years' experience and our empirical analysis show that the BCC does act on changes to inflation, the changes to the policy rate have been reactive rather than proactive. An important reason for monetary policy being frequently behind the curve is that the BCC lacks technical capacity to assess inflation developments. The absence of high-frequency and timely data on economic activity is problematic for the BCC and its ability to assess and determine the short-term interventions needed to keep liquidity within their program path.²⁰
 - The BCC's liquidity management is also hampered by weaknesses in banking supervision and market monitoring. This could lead to inaccurate estimates of refinancing needs of commercial banks or the commercial banks' level of excess reserves.
25. The BCC also faces challenges because of the DRC's relatively open economy, resulting in a high exchange-rate pass-through to inflation.

The Mundell-Fleming-Dornbusch model²¹ shows that even under a floating exchange rate regime, an open economy still has only limited monetary independence. This independence is further reduced when the exchange rate pass-through is high, and conflicting policy objectives weaken the credibility of the central bank. In the DRC, inflation is sensitive to exchange rate movements, with a high share of imported goods in the CPI. The extent of monetary policy independence is also influenced by the credibility of the policy institutions and their capacity—or lack thereof—to anchor agents' expectations. Conflicting objectives—price stability and a zero deficit

²⁰ In particular, the BCC has discontinued the compilation of the quarterly economic activity index it had initiated in 2009 because of lack of resources, although it compiles some key product indexes and has started to compile a business confidence indicator. The usefulness of this business confidence indicator in projecting inflation and economic activity is yet to be determined.

²¹ See the Mundell-Fleming-Dornbusch model (Mundell, 1963; Fleming, 1962; Dornbusch, 1976).

for the central bank—may cast doubts about the DRC’s determination and ability to control inflation. Higher inflation expectations will lead to higher risk premiums and exchange rate pressures. Under these circumstances, for small open economies, prudent monetary policy under a floating exchange rate regime may involve anchoring monetary policy to a major partner.²²

Box 3. Central Bank Reform

Years of negative cash flow eroded the BCC’s capital. In 2010, the government decided to recapitalize the BCC in two stages. In a first step, in February 2011, it issued interest-bearing, non-tradable treasury bonds in the amount of CGF1,025 billion, the amount necessary to bring the BCC’s capital to zero. This recapitalization was complemented in 2012 by an additional amount of CGF204 billion to cover the BCC’s deficit of 2010. In a second stage, the BCC’s capital would be increased to CGF213 billion, the equivalent of 1.75 percent of GDP. The authorities envisage financing the second phase through a combination of a revaluation of the BCC’s immobile assets and the issuance of additional treasury bonds. The second phase of the recapitalization requires an amendment to the central bank law, a draft of which was sent to parliament at end-2010 and is awaiting approval. For the recapitalization to have its desired effect of positive central bank capital and increased central bank independence, the terms of the recapitalization bonds need to be changed. The current recapitalization bonds carry an interest rate determined annually by the treasury. The uncertainty about the interest rate beyond one year limits the market value of the bonds to the one-year interest payment of the bond, and consequently, evaluated in terms of international financial reporting standards (IFRS), the capital of the BCC remains negative. Furthermore, the BCC remains exposed to political pressure because interest rates can be unilaterally changed by the treasury from one year to another. To remedy these difficulties, the recapitalization bonds should be converted into tradable bonds, carrying either market rates or a fixed interest rate unlimited in time.

Increased independence needs to be matched with increased accountability, transparency, and efficiency of the BCC. The BCC, during the last few years, has undertaken a comprehensive reform program that is ongoing:

- To focus its attention on its core mandate, the BCC was disengaging from managing its mint and its hospital. It has also taken several steps to improve its internal organization. More recently, however, political opposition led the BCC to abandoned its reform plans to disengage from the mint and hospital;
- Internal audit and procedures for follow-up have been strengthened;
- Work is being undertaken to improve accounting, notably through the migration of accounts to IFRS;
- Capacity for monetary operations and liquidity management has been enhanced through the introduction of market-based instruments, and work continues to enhance capacity to forecast liquidity, further improve the monetary tool box, and encourage its use to manage liquidity;
- Work is ongoing to strengthened banking supervision by means of improved collection and validation of data, and subsequent reporting. The work program also includes training in on-site inspections of banks and financial crisis prevention;
- Cash management is being made more efficient through improvements of the infrastructure for the distribution of banknotes and their denomination structure. An important step was the introduction of higher denomination bank notes in June 2012, which will work in favor of dedollarization and significantly reduce BCC costs for cash management.

²² Borensztein, Zettelmeyer, and Philippon (2001) find that interest rates in a group of eight economies (Argentina; Australia; Canada; Hong Kong S.A.R., China; Mexico; New Zealand; Singapore; South Africa) followed quite closely changes in U.S. monetary policy, regardless of their exchange rate regime and institutional credibility.

IV. POLICY OPTIONS TO ENHANCE THE EFFICACY OF MONETARY POLICY

26. The high level of dollarization constrains the effectiveness of monetary policy. This situation is likely to persist in the DRC for years to come. The current floating exchange rate regime offers some autonomy to the BCC in setting its monetary policy, although many factors work against this, including a shallow financial market, a high exchange rate pass-through, weak monetary institutions, and a dollarized credit market. Addressing these structural weaknesses could reverse the dollarization, but this would likely take some time.

Alternative MPFs could be more effective, but each faces its own problems in the current economic and institutional setting. We consider some of these policy options below from improvements to the status quo to hard pegs, and in particular, full dollarization (Annex Table 1 provides a summary of the pros and cons of different monetary regimes).

A. A Fully Independent Central Bank

27. An (de-facto) independent central bank focused on rigorous implementation of its core mandate, improvements in the central bank's data availability and research capacity, deeper financial markets, as well as measures to encourage dedollarization would gradually improve the effectiveness and independence of the DRC's monetary policy in the long run. These improvements would enable a more flexible and modernized MPF, anchored in a coherent forward-looking strategy where monetary aggregates are monitored and analyzed systematically along with a broad array of other macroeconomic and financial indicators, including inflation, output, interest rates, and the exchange rate. Because most of these reforms will take time, the current operational constraints are likely to remain for some time.

28. Central bank independence and the adoption of far-reaching institutional, policy, and operational reforms are necessary to build credibility and improve efficiency in monetary policy. Such reforms need to target the monetary policy constraints discussed in Section III, addressing institutional and administrative weaknesses, financial sector fragmentation, and measures aimed at reducing the level of dollarization.

29. Central bank independence and a clear hierarchy of objectives require financial independence from the government through the completion of the BCC's recapitalization. This entails that the recapitalization bonds carry a predictable return with a remuneration either at market rates or, at minimum, at an interest rate guaranteed through the bond maturity. Improved central bank independence also has the virtue of limiting the scope for fiscal dominance and improving fiscal discipline as the government would then find it harder to get central bank financing to cover the budget deficit.²³

²³ Based on two indicators of central bank independence of a large set of developing countries in 1995–2004, results from a panel analysis (Lucotte, 2009) show a negative relationship between central bank independence and budget deficits.

30. Relatively simple operational reforms must aim at setting proper incentives and adequate accountability structure, as well as strengthening liquidity management capacity and research and data analysis.²⁴ In particular, the BCC needs to further develop its central bank operational framework and instruments to improve liquidity management. Liquidity management operations typically involve two types of auction mechanisms with (i) short-term assets (securities sold outright, or repo, or term deposits) issued at the policy rate (the size of the auction is driven by the market demand, and the central bank accepts all the bids); and (ii) longer-term assets (but the size of the auction is predetermined by the central bank and based on the liquidity forecast, while banks have to place their bids for both quantity and the interest rate). The BCC also needs to strengthen its technical capacity to assess inflation developments through a systematic compilation and analysis of high-frequency data on economic activity.

31. Measures aimed at financial deepening would increase the share of the population with access to the formal banking system and thereby improve the monetary policy transmission mechanism. Confidence in the banking system can be increased through improved banking supervision and a well-functioning bank resolution system. The provision of financial services with a wider choice of services geared to all levels of society, however, is a lengthy process. On account of the small financial amounts involved and the high transaction costs, the banking industry is less inclined to service the wider and poorer segments of the population. The payment of public salaries through the banking system is an important first step, which needs to be complemented by a sound framework for microfinance.

32. An enhanced monetary policy regime would also benefit from measures to dedollarize, which could take decades to materialize. International experience suggests that dollarization tends to persist for a long time after stabilization, even more so when the duration of instability is protracted (as is the case in the DRC).²⁵

33. International experience also shows that measures that provide the right incentives and encourage the use of the local currency are more effective than measures to force dedollarization. Measures that encourage dedollarization—which would also benefit the

²⁴ Canales-Kriljenko and others (2010) demonstrate how the adoption of far-reaching institutional, policy, and operational reforms during the last two decades enabled central banks in Brazil, Chile, Colombia, Mexico, and Peru to build credibility about their commitment with the objective of price stability. As a result of improved macroeconomic policies and independent and accountable central banks, these countries adopted flexible MPFs that became an alternative to exchange rate management or the use of traditional money targeting as a nominal anchor. They successfully managed significant stress during the recent global crisis. The paper contains useful recommendations on how to strengthen the MPF.

²⁵ In countries with prolonged instability (Argentina, Bolivia, Mexico, Peru, Uruguay, Turkey, Lebanon), dollarization has often persisted long after stabilization. In contrast, in countries where very high inflation was more temporary, dedollarization took place afterwards (Poland, Russia, Vietnam, Egypt, Albania, Romania, Bulgaria, Slovenia, Ukraine, Estonia, Latvia, Lithuania). See Ngonga Nzinga and Ulimwengu, 1998.

development of the financial sector—should focus on *pull factors* (market based dedollarization measures, such as strengthened liquidity management and instruments; development of domestic money and capital markets; and enhanced usability of the local currency) rather than *push factors* (forced dedollarization measures, such as mandatory use of local currency or regulations against the use of foreign currency), which in essence force the holding of local currency assets. Proper sequencing is important, and risks such as efficiency losses, capital flight, and banking sector instability need to be taken into account.²⁶ Box 4 gives an overview of international experience with dedollarization and its applicability to the DRC.

34. Most of the measures to encourage the use of local currency would, in addition to contributing to dedollarization, also strengthen the economy and improve its functioning. Strengthening liquidity and assets management, including debt management, issuance of new bank notes and coins with more user-friendly denominations, and financial deepening through improved banking supervision will reduce transaction costs and contribute to higher growth.

B. Hard Pegs Through Full Dollarization and/or Fixed Exchange Rates

35. Full dollarization or fixed-peg arrangements could be a quick route to higher credibility and improved macroeconomic stability. The high level of dollarization implies characteristics akin to a fixed peg. By effectively eliminating the possibility to monetize fiscal deficits, full dollarization could have the advantage of strengthening macroeconomic stability and investors' confidence. The DRC would effectively benefit from the credibility of the U.S. monetary authorities. A number of countries have opted for full dollarization, including Panama, Ecuador, and Bulgaria (the latter with the Euro).

²⁶ For example, in Chile, Israel, and Poland dedollarization began with macroeconomic stabilization that led to an interest rate differential in favor of the local currency and a successive change in the composition of public debt in favor of local currency. In Egypt, dedollarization was achieved through macroeconomic stabilization and liberalization of the financial system (Kokenyne, Ley and Veyrune, 2010). In Latin American countries (Bolivia, Paraguay, Peru, Uruguay), exchange rate appreciation was a key factor behind a sustained decline in dollarization, which was also supported by prudential measures to internalize currency risks, reserve requirement differentials, the development of capital markets in local currency, and dedollarization of local currencies (García-Escribano and Sosa, 2011).

Box 4. Dedollarization in the DRC Drawing on International Experience

International experience shows that providing incentives to use local currency (pull measures) is likely to be more effective than measures to limit dollarization (forced dedollarization or push measures). The following provides an overview of measures taken in various dollarized economies:¹

Market-based dedollarization policies (pull factors)

- **Strengthening central bank liquidity management and instruments** to make local currency more attractive (by making the currency more tradable and interest less volatile). Examples of such measures include (i) reserve requirements, standing deposit and lending facilities, and open market operations to stabilize the domestic interbank rate; (ii) introduction of medium-term government paper to improve monetary policy signaling and develop a yield curve, which also helps development of a local bond market; and (iii) development of the foreign exchange market to ensure easy access to foreign currency, thus reducing the need to hold foreign currency as a precaution. Most of these steps could in some form be usefully taken in the DRC. As for point (ii) the current 7 and 28 days maturities of central bank bills are too short to develop secondary markets, stimulate the interbank market, or develop a yield curve, and thus develop the financial market; even so, the demand for longer-maturity paper is probably insufficient for the BCC to introduce it.
- **Strengthening fiscal and public debt management.** Fiscal consolidation, by reducing government borrowing in foreign currency, can help reduce dollarization of government liabilities. The government should also as much as possible operate in local currency, including raising taxes and payments for wages, goods, and services (such as in Angola). Foreign aid should be used in local currency and taxation unbiased so it does not favor holdings of foreign currency. Development of debt management to issue local currency-denominated bonds would dedollarize the government's balance sheet and allow more exchange rate flexibility (such as in Bolivia, Brazil, Israel, Mexico, Turkey). In addition to continued prudent fiscal management, all these measures would in some form be applicable to the DRC.
- **Developing a domestic financial market and increasing retail banking.** The issuance of local currency-denominated government bonds would be a first step toward a domestic liquid bond market. Dedollarization can be encouraged by also increasing the choice of local currency-denominated securities traded on domestic monetary and capital markets. Financial deepening extends banking services to the parts of the business sector and the population more likely to use the local currency. Greater potential for business in "consumer banking" will also increase banks' incentives to conduct operations in the local currency. In the DRC, a first step toward the issuance of local currency-denominated bonds that can be a catalyst to the development of a local bond market is to strengthen the management of domestic debt. The ongoing expansion of the banking sector is positive and needs to be accompanied by strengthened banking supervision (see below).
- **Strengthening payment systems and the usability of the local currency.** Payment systems should be designed so that payments in local currency are *at least* as convenient and efficient as those in foreign currency. A fundamental step in this respect is to ensure availability of bank notes with user-friendly denominations, which reduce transaction costs, and make the use of the local currency for larger transactions more convenient (larger denomination bank notes increased demand for local currency in Cambodia). In the last five years, the largest bank note of domestic currency available was worth less than one U.S. dollar and about half a dollar during the past two years. The recent introduction of higher denomination bank notes in the DRC is therefore a very positive step. Also, a new payment systems' law, to be submitted shortly to parliament, should be instrumental in facilitating payments and reducing transaction costs in the banking sector.

Box 4. De-Dollarization in the DRC Drawing on International Experience (concluded)

- **Creating an interest rate wedge.** Some countries have experimented with this, but experience has been mixed. An interest rate wedge is effective only if substitution is more likely to occur between foreign currency and local currency within the country than with foreign currency deposits abroad and can also lead to unsustainably large capital inflows (Hungary).
- **Establishing effective supervision and prudential regulation** can encourage dedollarization by highlighting balance sheet risks from dollarization and internalizing the risk of doing business in foreign currency. For example, in Mozambique banks are required to constitute higher provisions for foreign currency lending to nonexporters. Strengthened banking supervision is recognized as a high priority area in the DRC and an extensive reform program is under way.
- **Excluding foreign deposits from the deposit insurance scheme or by ensuring deposit insurance only in domestic currency for both domestic and foreign currency deposits.** This measure would require a well-informed public. Otherwise banks would have an incentive to encourage foreign currency deposits, since interest rates on foreign currency deposits are generally lower. The DRC does not currently have any deposit insurance, and substantive improvements in banking supervision and enforcement of prudential norms is needed before such a scheme could be considered.

Forced dedollarization measures (push factors)

- **Imposing reserve requirements in local currency.** Measures requiring banks to denominate reserve requirements partly or fully in local currency (DRC) to create a captive local currency market, remunerating reserve requirements on local currencies at a higher rate than on foreign currency (Bolivia, Honduras, Israel and Nicaragua), or imposing higher reserve requirements on foreign currency deposits, would encourage banks to attract local currency and thus increasing the deposit rate differential. The practice with reserve requirements in local currency also for foreign currency deposits is not advisable in the case of the DRC with its extremely high level of dollarization since the commercial banks' management of net open positions becomes unmanageable and it deprives the central bank from additional foreign currency which may become necessary in the event of a banking crisis.
- **Requiring use of local currency in domestic transactions and for price setting of goods and services.** Prohibiting the use of foreign currency in domestic transactions has been used in many countries incl. Angola, Israel, Lao P.D.R and Peru. Also, even if the use of foreign currency is still allowed, it can be made mandatory to display prices in local currency.
- **Regulations can also discriminate against the use of foreign currency,** for example by imposing limits on foreign currency borrowing or lending (Angola, Argentina, Israel, Lebanon, Turkey and Vietnam). A mandatory holding period for foreign exchange can also be used, but this may instead have the adverse effect of encouraging holdings of foreign currency cash instead.
- **Forcing a reverse of dollarization through mandatory conversion of foreign currency deposits into domestic currency has had adverse effects (Bolivia, Mexico, Peru) through loss in the authorities' credibility and a perceived risk of confiscation.** Mexico tried restricting foreign currency holdings to firms. While this may have some effect, it is likely to be distortionary and come with administrative costs. Some countries (Argentina, Pakistan) tried different measures to suspend access to foreign currency deposits, but this also jeopardized the trust in the banking system and can lead to capital flight.

¹This box is based on Kokeyne, Ley, and Veyrune (2010).

36. The effect from full dollarization on the country risk premium is uncertain. The generally expected benefit from dollarization is a reduction of the currency risk premium, as the depreciation risk disappears. However the default risk may increase as it loses the possibility to inflate the debt away or use the exchange rate to boost competitiveness and growth (Jahjah and Montiel, 2007). In the DRC, however, the loss of the exchange rate instrument appears benign, at least in the medium term. With a high pass-through, any depreciation translates into higher prices. Furthermore, exports of minerals are insensitive to changes in the REER.

37. Full dollarization could accelerate financial sector deepening. Given the small size of the market in local currency under the current regime, the incentives are small and costs high to develop financial instruments in local currency. In addition, the reserve requirement, denominated in local currency, constrains the capacity of commercial banks to grow their deposit base in dollars, forcing large investors to operate in off-shore accounts. Such a constraint would disappear with a full dollarization.

38. The main benefit of a fixed peg is to anchor the domestic monetary policy to a reputable foreign central bank. Unlike other monetary targets, an exchange rate target is simple and can easily be understood and monitored by the public. A fixed peg could also help mitigate the credibility problem—similar to what the DRC faces—because it forces a tightening of monetary conditions when there is a tendency for the domestic currency to depreciate (and vice versa), at the cost of depleting foreign exchange reserves.

39. Compared to full dollarization a fixed peg safeguards the option of an exchange rate adjustment in the face of a large shock, but lack of credibility may give rise to speculative attacks and a rapid depletion of international reserves. The possibility of an exchange rate adjustment would alleviate the burden of the adjustment away from fiscal policy response and wage adjustment. However, the track record of good and sound macroeconomic policies is relatively recent in DRC, and the level of international reserves remains low, putting the franc at risk of speculative attacks. In addition, the relatively higher frequency of domestic and external shocks may lead to repeated exchange rate adjustments, further weakening the credibility of the peg. To shield against speculative attacks, many authorities opt to further strengthen the peg through a “tying one’s hand policy” by adopting a currency board;²⁷ joining a monetary union; or, as discussed above, establishing full dollarization.

40. A currency board could partially overcome the credibility issue, while retaining most benefits and limitations of full dollarization. Credibility would come from defining a simple rule linking the money in circulation with international reserves. The rule could also be

²⁷ Under a currency board, the BCC would supply (and redeem) currency only in exchange for foreign exchange at a predetermined exchange rate so changes in money demand would be fully accommodated by endogenous changes in the BCC’s international reserves and the balance of payments.

defined in a law, making it more difficult to change. Similar to full dollarization, the relatively small amount of local currency usage in the economy also limits the foreign reserves required for a credible backing of the local currency.²⁸

41. However, a fixed peg or full dollarization also implies costs that need to be weighed against the potential benefits:

- The loss of (future) monetary policy independence, which limits the authorities' instruments to respond to economic shocks. Arguably, it will take years until the central bank can run a countercyclical monetary policy. However, the ability to devalue its exchange rate in times of crisis—a policy option the central bank currently has—resulting in a real reduction in salaries and thus helping absorb severe external shocks has, in the past, proved a useful safety valve for the DRC.
- Full dollarization or a currency board is costly. With full dollarization or a currency board, the authorities would need close to US\$2 billion, on top of any reserve target, to buy back the local currency in circulation. Under dollarization, any seignorage would also be foregone.
- There may be no optimal currency to peg the exchange rate. The highly concentrated export base makes full dollarization or a fixed exchange rate a less attractive option. Contrary to some dollarized economies like Panama, Ecuador, and Bulgaria, the DRC's export base is highly concentrated in a few minerals products, making the supply of foreign exchange highly dependent on commodity prices and mining and other natural resource production. Consequently, managing liquidity and adapting it to changes in money demand could be severely complicated. In addition, DRC's business cycle is likely different to the U.S. (or European) business cycle. Booms and busts in the commodity market would also require the central bank to accumulate significant amounts of international reserves to weather a fall in export receipts and fiscal revenue. In fact, a full dollarization would be akin to introducing a “copper and cobalt” standard, because copper and cobalt exports represent more than 90 percent of all exports. This could be an impediment to a more diversified economy.
- The central bank's ability to act as a lender of last resort in foreign exchanges is limited to its international reserves. This limitation is also observed under the current monetary framework. However, as the economy dedollarizes, the central bank's ability to act as a lender of last resort would increase in par.
- A fixed exchange rate can conflict with a low inflation target. With rapid productivity growth in the tradable sector, the real exchange rate could appreciate (the

²⁸ Backing rules differ substantially across currency board arrangements. They all include currency in circulation. Some central banks also include deposits of commercial banks at the central bank and other liquid liabilities of the central bank (reserves and other deposits of commercial banks, government deposits, domestic currency denominated securities, promissory notes issued by banks). Currency boards typically cover 100 percent of the chosen liability by foreign currency. In some cases, however, the backing is less.

Balassa-Samuelson style effect). Under a fixed exchange rate regime, such an appreciation will take place through inflation (as prices of non-tradable goods rise).

V. CONCLUSIONS

42. A number of factors contribute to the limited effectiveness—confirmed by our econometric analysis—of monetary policy in the DRC: the high level of dollarization, institutional and administrative weaknesses, fiscal dominance, and the lack of capacity and credibility of the monetary authorities. Monetary policy in its conventional meaning and effectiveness remains a long-term objective and is, for now, actually limited to management of currency in circulation and of the exchange rate. The institutional reforms required to improve the effectiveness of the current MPF are significant, and it will take years if not decades before dollarization declines, financial markets develop, and monetary policy becomes more effective. Yet, we argue that this is still the most viable option for the DRC for several reasons:

- First, seeking to borrow the credibility of a foreign central bank through a fixed peg in the context of weak institutions and a short track record of macroeconomic discipline makes the currency vulnerable to speculative attacks. Abandoning a peg would further harm the (weak) credibility of the central bank.
- Second, by opting for a stronger fixed peg—a currency board or full dollarization—the DRC would require US\$2–4 billion, or the equivalent of the domestic currency and whatever level of international reserves the authorities consider necessary to fulfill its lender-of-last resort function. Even if this cost is relatively low by international standards, under the current circumstances of a tight budget and lack of access to international financial markets, the DRC does not seem able to raise such an amount of capital.
- Third, the DRC's exports are concentrated in a few commodities with historically volatile prices. Under the current monetary policy regime the DRC keeps the option of a real devaluation. It is able, through a reduction in real wages, both public and private, to partially absorb external shocks and thus limit the adverse impact on growth and employment.
- Fourth, a fixed exchange rate can conflict with a low inflation target if the real exchange rate would appreciate as a result of rapid productivity growth in the tradable sector.
- Finally, the DRC is undergoing profound structural changes. Its economy will eventually diversify, and its export markets will develop. A hard peg, be it full dollarization or a currency board, would lock the country into a currency that may not be optimal at future stages of development.

Annex Table 1. Pros and Cons with Different Exchange Rate Regimes

Exchange Rate Regime	Pros	Cons
Floating currency regime	<p>Although limited at present, monetary and exchange rate instrument remains to respond to fluctuations in demand and shocks.</p> <p>Seignorage received.</p>	<p>Leaves the possibility of monetary financing of the fiscal deficits.</p>
Full official dollarization	<p>Relatively easy to implement.</p> <p>Lower risk of currency crises (no currency mismatches) and reduced market determined interest rates spreads (relative to peg or floating exchange rate).</p> <p>No possibility to monetary financing of fiscal deficit.</p> <p>Reduced transaction costs/closer financial integration.</p>	<p>Complete loss of monetary policy as an instrument.</p> <p>Loss of “national symbol”/politically difficult.</p> <p>Loss of all seignorage.</p> <p>Nearly irreversible: dedollarization will be very difficult to reverse should it later be desirable to re-introduce the national currency.</p> <p>Limited possibility for CB to act as lender of last resort (only to small banks by “saving up” U.S. dollars).</p>
Currency board arrangement	<p>Introduces just as much discipline as dollarization.</p> <p>Receive (limited) seignorage.</p> <p>Lower risk of currency crises (no currency mismatches).</p> <p>Reduced market interest spreads for government bonds (when the DRC comes to the point of issuing those), but not to the same extent as dollarization because the currency risk would disappear, but not the default risk.</p> <p>Reduced transaction costs/closer financial integration.</p>	<p>Complete loss of monetary policy as an instrument.</p> <p>Requires strong credibility (externally imposed safeguards may be needed and strong fiscal legislation is important).</p> <p>Vulnerability to speculative attacks (risk of becoming a succession of fixed adjustable pegs).</p> <p>Difficult to re-introduce national currency later.</p> <p>The central bank can only act as lender of last resort to the extent that there are equivalent “extra” reserves.</p>

Annex Table 1: Pros and Cons with Different Exchange Rate Regimes (concluded)

Exchange Rate Regime	Pros	Cons
Fixed peg arrangement	<p>If credible, it can help reduce market interest spreads for government bonds (when the DRC comes to the point of issuing those), but only by reducing the currency risk, not the default risk.</p> <p>Reduced transaction costs/closer financial integration.</p> <p>Safeguards the option of an exchange rate adjustment in the face of a large shock.</p> <p>Receive seignorage.</p>	<p>Risks of speculative attacks.</p> <p>Requires very credible institutional framework and fiscal rigor.</p> <p>May result in a series of exchange rate adjustments.</p> <p>Limited possibility to act as a lender of last resort.</p>
Conventional or crawling peg arrangement (de jure)	<p>Anchor for low inflation (expectations).</p> <p>Deeper financial intermediation/lower transaction costs.</p>	<p>Loss of autonomous monetary policy.</p> <p>In case of insufficient credibility: risk of unfavorable e-rate movements and repeated devaluations/adjustments.</p> <p>Restricted possibilities for the CB to act as a lender of last resort (subordinate to keeping the peg).</p>

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