

The How, Why and What questions of Dollarization

by

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Abstract

This paper unfolds the puzzles of why dollarization helps reduce inflation in some countries but not in some others and why it might alleviate or aggravate exchange rate volatility. It also reveals how dollarization affects the monetary policy transmission mechanisms and why the exchange rate channel is most effective in a dollarized economy. This paper finds the balance sheet effect, the purchasing power effect, currency substitution effect, currency mismatch and “fear of floating” as some of the answers to the why, how and what questions posed in the study.

Keywords: exchange rate, inflation, monetary policy, dollarization, and central bank.

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1. Introduction

Dollarization has been a widespread practice in the developing world. Dollarization was introduced in these countries initially in an effort to pursue their development objectives. Since most developing countries lack adequate financial resources needed for their development, they usually obtain loans to fill the financial gap. Unlike developed countries, however, the loans are not issued in their own currency. Loans issued in dollars, therefore, is the fundamental foundation of dollarization which Eichengreen and Hausmann (1999) refer to as '*the original sin*'. Even though developing countries share common foundations in their dollarization, the magnitude and development of their dollarization varies depending on their socio-economic factors. It has been noted that the literature reviewed so far have found controversial outcomes as to whether dollarization reduces or produces inflation, alleviates or aggravates exchange rate volatility and facilitates or complicates monetary policy transmission mechanisms (MPTMs).

This study, therefore, aims to provide the potential economic reasons behind the controversies as to why and how dollarization might have different impacts on the dollarized economy. In doing so, this study contributes to the development of economic theory of dollarization which will assist in predicting the changes on macroeconomic variables of an economy due to its dollarization.

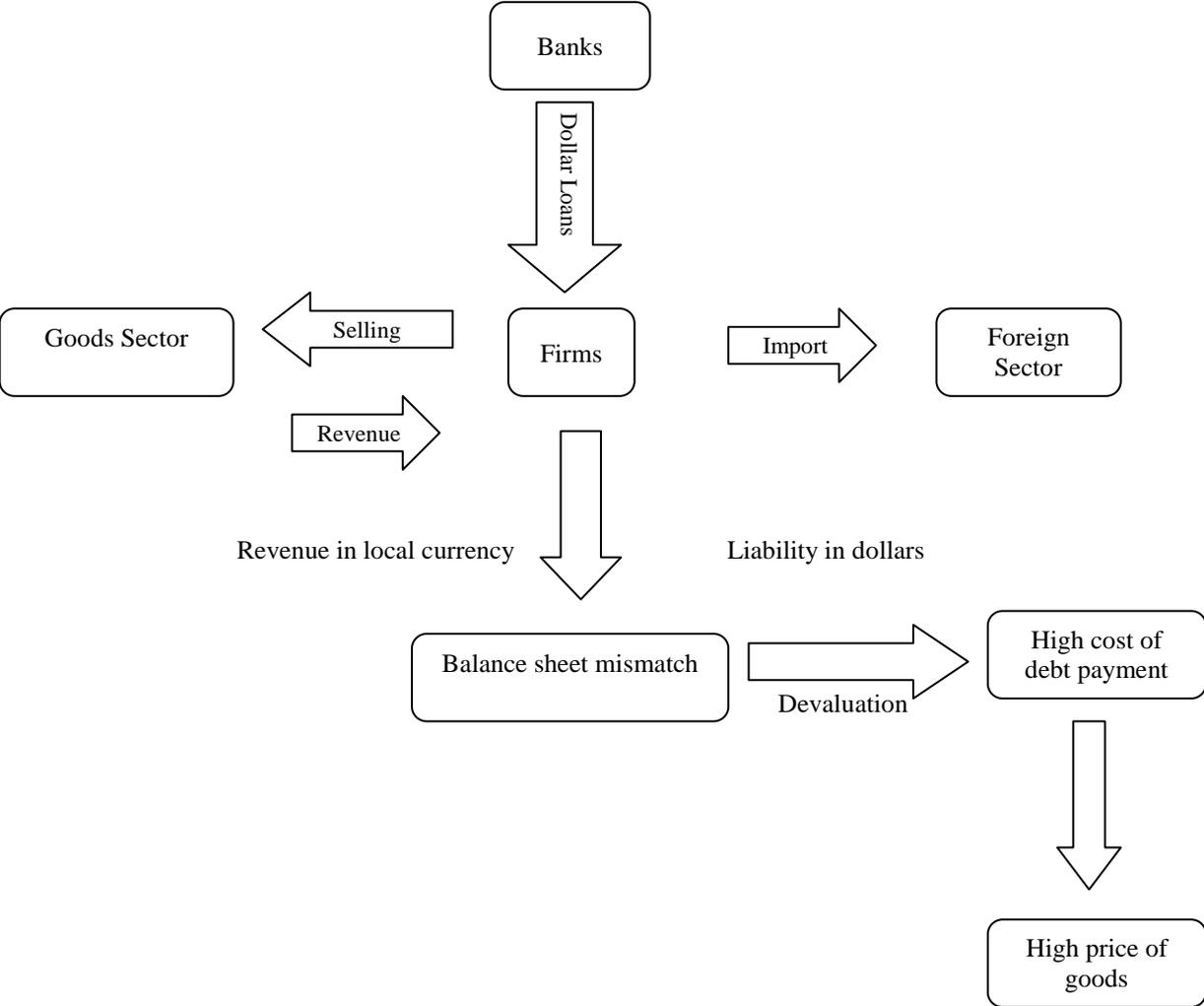
2. Inflation and Dollarization

The studies on the impact of full dollarization on inflation reveal that fully dollarization reduces inflation (see Kurasawa and Marty, 2007; Elbadawi & Majd, 1996; Payne, 2009; Kim et.al., 2004). The studies on the effect of partial dollarization on inflation, however, reveal divisive outcomes. While Bahmani-Oskooee and Domac (2003), Yeyati (2006) and Karacal (2005) find an increase in inflation, Gruben and McLeod (2004), and Berg et al., (2003) find a decline in inflation as a result of partial dollarization. In a slightly different perspective, Reinhart et al., (2003), and Leiderman et al., (2006) find that the exchange rate pass-through is high the higher the degree of dollarization. The question arises as to what kind of economic explanation can be drawn from these outcomes? Why are some countries able to lower inflation as a result of partial dollarization but not others?

In the author's view, the answer to the first question relies on the balance sheet effect of the exchange rate depreciation. When firms issue debts in foreign currency, the firms' debt in terms of local currency rises in times of the exchange rate depreciation. This promotes firms to raise prices to cover their costs. The larger the amount of the debt denominated in foreign currency, the greater the effect of the exchange rate depreciation on the firms' balance sheet and the greater will be the exchange rate pass-through effect in the economy. When the economies are fully dollarized, however, they are legally abandoning their currency and adopting foreign currency. There is, therefore, no mismatch in the balance sheet of the firms.

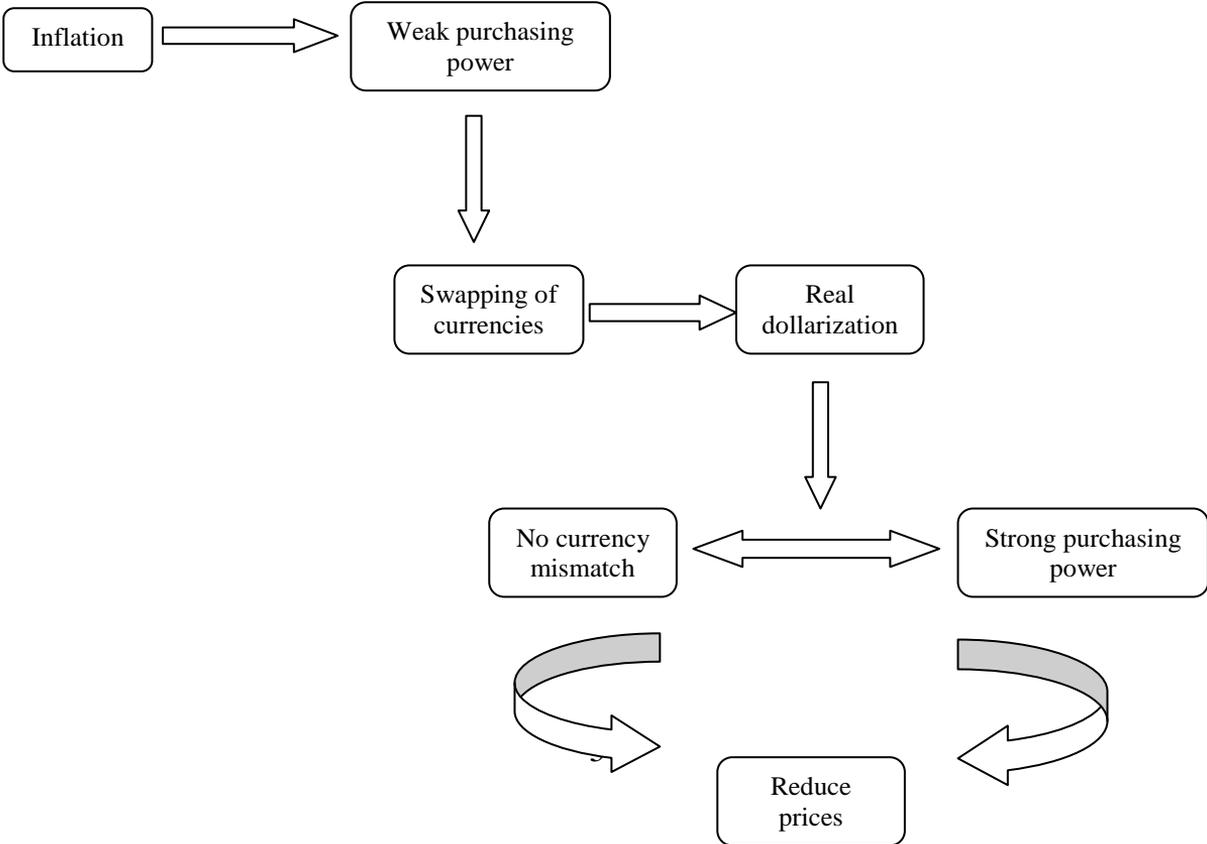
Firms can earn foreign currency and able to pay their debts in foreign currency. The summary of the balance sheet effect is given in Figure 1.

Figure 1: The Balance Sheet Effect Framework



The answer to the second question relies on the purchasing power effect. Normally, inflation weakens the purchasing power of the domestic currency. As a result, individuals tend to swap weak domestic currency for strong currency. If the swapping ultimately leads to real dollarization, then there are two outcomes. First, firms will not face currency mismatch even if the economy is partially dollarized because firms can earn dollars and pay their debts in dollars. Second, since the payment is made in dollars the purchasing power is strong. Eventually, these two outcomes reduce inflation in the economy. Figure 2 summarizes the purchasing power effect.

Figure 2: The Purchasing Power Effect



If, however, the swapping of currencies does not lead to real dollarization, then inflation tends to increase with the increase of partial dollarization. There are three possible explanations for this.

First, an increase in dollarization signifies

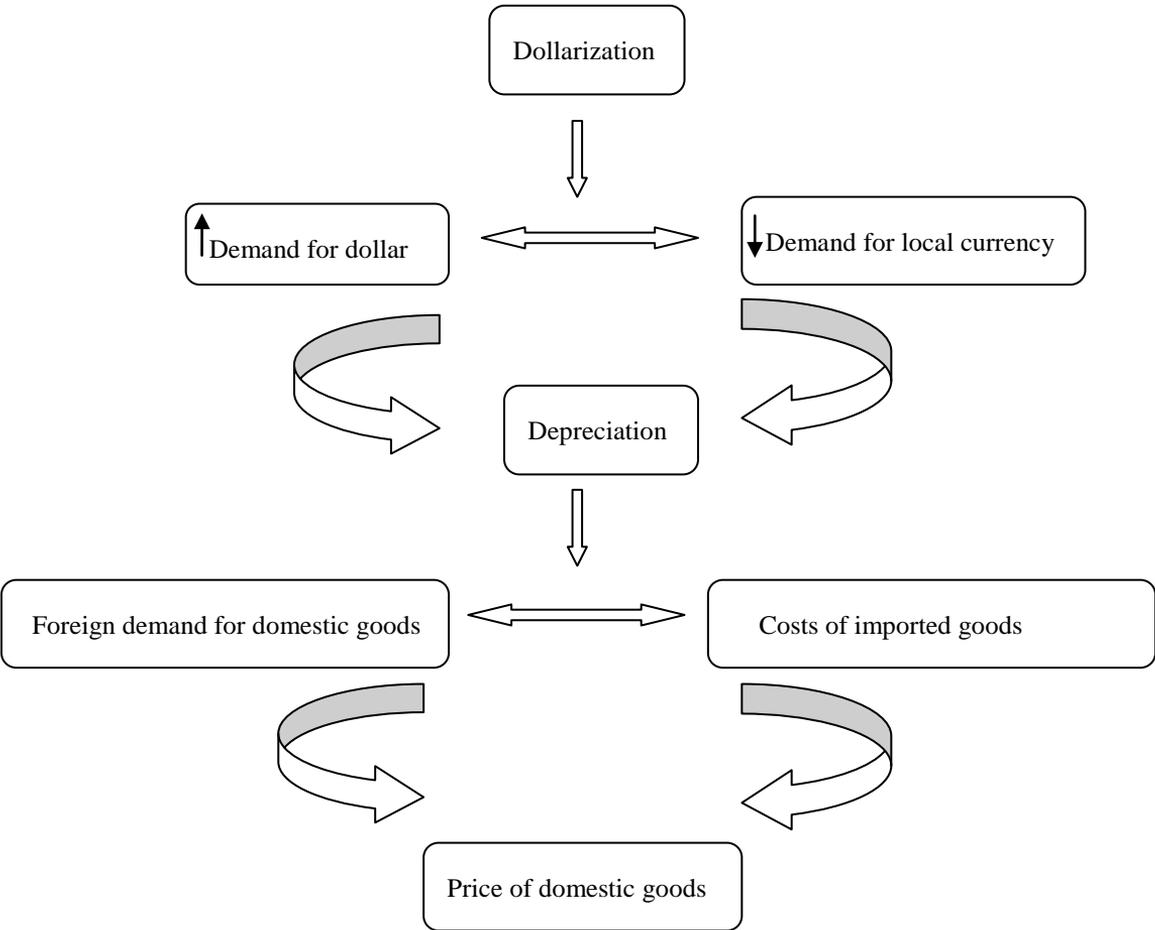
- (i) An increase in demand for dollars
- (ii) A decrease in demand for domestic currency

The outcomes (i) and (ii) show the depreciation of the exchange rate which increases the foreign demand for domestic goods and pushes up the price of domestic goods.

Second, the depreciation of the exchange rate means higher cost of import which increases the domestic price of imported goods and inflation.

Third, as has also been discussed by Rojas- Suarez (1992) and Bahmani-Oskooee and Domac (2003), the level of the monetary base declines as residents substitute more domestic currency for foreign currency. Since the fall in the level of monetary base signifies the loss of seigniorage, authorities tend to increase money supply to raise revenue from inflation tax. An increase in money supply will raise the level of prices in the economy. This explanation is summarized in Figure 3 below.

Figure 3: Currency Substitution Effect



3. Exchange rate volatility and dollarization

The widely held view of dollarization and exchange rate volatility is that dollarization stabilizes exchange rate volatility. The empirical result, however, shows the form of dollarization matters. Full dollarization usually

stabilizes exchange rate volatility. Partial dollarization, however, increases exchange rate volatility (see Girton & Roper, 1981; Corrado, 2007; Akcay et al., 1997; Bahmani-Oskooee and Domac, 2003; Lay et al., 2012; Yinusa, 2008). In contrast to this, Honig (2009), Berkmen and Cavallo (2009) and Berg and Bornsztein (2000) argue that even if dollarization causes exchange rate volatility, it encourages policy makers to engage in exchange rate stabilization. Its impact, therefore, is mitigated.

The efforts to stabilize the exchange rate work only if the economy is free of black market foreign exchange and the domestic money supply is flexible enough to cope with any disturbances. The early work by Girton and Roper (1981) shows that exchange market intervention may not help to stabilize exchange rate volatility under partial dollarization, even if there is no black market. Similarly, Corrado (2008) argues that real dollarization along with financial dollarization makes the achievement of less costly stabilization programs difficult.

In the author's view, it might be arguable that partial dollarization would aggravate, while full dollarization might alleviate exchange rate volatility. This argument is based on the fact that the existence of partial dollarization indicates the existence of currency and/or asset substitution in the economy. If agents are swapping foreign and domestic currencies, the value of foreign exchange is likely to respond to fluctuations in currency demand, with lower or higher demand depreciating or appreciating the currency. It is, therefore, unlikely to see a steady state of the exchange rate

for prolonged period of time if it is determined by the interaction of demand and supply and, in particular, if demand plays a major role in the determination.

It should be noted, however, that if there are no black market activities in the economy, the ‘fear of floating’ might even out the exchange rate even if the economy is partially dollarized. If an economy is fully dollarized, on the other hand, the volatility of the foreign currency itself becomes the volatility of the domestic currency. Many developing countries, however, fix their currencies against a hard currency which makes the volatility of the hard currency minimal.

4. Monetary policy transmission mechanisms and Dollarization

The conventional view is that dollarization restrains the transmission mechanisms and hence the effectiveness of the monetary policy in terms of achieving its objectives. While recent studies such as Isakova-Cerge-ei (2008), and Acosta-Ormaechea and Coble (2011) support this view, other studies by Armas and Grippa (2005), and Leiderman et al., (2006) strongly differ from this. The reviewed literature have commonly missed certain points. First, the word ‘effectiveness’ is merely used as achievement without considering the time spent to achieve and the stability of the achieved policy objective. Second, more emphasis is given to low inflation. Monetary policy, however, also aims at stable financial and exchange rate systems. To understand whether or not dollarization hinders

the effectiveness of monetary policy, addressing how dollarization affects the transmission mechanisms is essential.

Dollarization makes exchange rate volatile and money demand unstable, as pointed by Havrylyshyn and Beedies ChH (2003), which causes currency risk or exchange rate risk in times of expansionary monetary policy. Dollarization also tends to create currency mismatch in the balance sheet of banks. The presence of currency mismatch, coupled with the exchange rate risk, might make borrowers unable to cope with their debt payment and hence might cause credit risk.

While credit risk affects the availability of credit and therefore the lending channel, the default itself reduces credit worthiness and the effectiveness of the balance sheet channel. Moreover, the volatility of the exchange rate and the instability of money demand make individuals less sensitive to changes in the domestic interest rate. Consequently, interest rate becomes less effective.

One might argue that these outcomes occur only in times of expansionary monetary policy. What if there is contractionary monetary policy? The answer to this question depends on whether or not contractionary monetary policy leads to liability dollarization. Contractionary monetary policy leads to liability dollarization in two ways. First, if domestic interest rate is higher relative to interest rate on foreign currency, then individuals might tend to shift to dollar loans. Second, since domestic currency appreciates with any rise in domestic interest rate, the

debt payment on dollar loans becomes cheaper which might promote more dollar loans. The tendency to shift to dollar loans reduces the domestic credit and might weaken the credit channel.

As noted in the discussion above, the existence of dollarization makes the lending, balance sheet and interest rate channels less effective, while the exchange rate channel is more effective. One of the reasons for the exchange rate channel to be more effective is that dollarization makes exchange rate more volatile. For this reason, central banks frequently intervene in the foreign exchange market in an attempt to stabilize the exchange rate. If the central bank is using the exchange rate target policy to reach its targeted exchange rate, then there may be a stable currency provided that the economy is free from black market activities. Because the exchange rate volatility plays a significant role in affecting the levels of consumption, investment, government expenditure and net exports, managing the exchange rate volatility will be most effective.

5. Conclusion

Despite a number of studies addressing the causes and effects of dollarization, there remained unresolved fundamental questions of why dollarization reduces inflation in some economies but not in others and what the reasons are behind the discrepancies in the findings of the impact of dollarization on exchange rate volatilities. Furthermore, the question of why the exchange rate channel is most effective relative to the interest rate and credit channels has not been addressed so far. For this reason, the

discussions in this paper are expected to fill the gap and thereby provide useful information for researchers and policy makers. The balance sheet effect, the purchasing power effect and the currency substitution effect are some of the factors contributing to the discrepancies in the impact of partial dollarization on inflation.

Moreover, dollarization alleviates exchange rate volatilities if the economy is fully dollarized. This is as a result of pegging the currencies of most countries to the hard currencies which benefited the economies that adopt hard currency as their legal tender in stabilizing the volatility of their exchange rate. Partial dollarization, however, may alleviate or aggravate exchange rate volatilities, depending on whether or not the economy is free of black market activities and also depending on the currency substitution effect. Since exchange rate volatility increases with partial dollarization in some economies, fear of floating tends to make the exchange rate channel most effective relative to the other channels in the dollarized economy.

References

Acosta-Ormaechea, S., & Coble Fernandez, D. (2011). *Monetary transmission in dollarized and non-dollarized economies: The cases of Chile, New Zealand, Peru and Uruguay* (IMF Working Paper: WP/11/87). Washington, D.C.: International Monetary Fund. Retrieved from <http://www.imf.org/external/pubs/ft/wp/2011/wp1187.pdf>

- Akçay, O. C., Alper, C. E., & Karasulu, M. (1997). Currency substitution and exchange rate instability: The Turkish case. *European Economic Review*, 41(3-5), 827-835.
- Armas, A., & Grippa, F. (2005). *Targeting inflation in a dollarized economy: The Peruvian experience* (IDB Working Paper: No. 448). Washington, D.C.: Inter-American Development Bank, Research Department. Retrieved from Social Science Research Network (SSRN): http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1818737
- Bahmani-Oskooee, M., & Domac, I. (2003). On the Link between Dollarisation and Inflation: Evidence from Turkey. *Comparative Economic Studies*, 45(3), 306-328.
- Berg, A., Eduardo, B., & Paulo, M. (2003). Monetary regime options for Latin America. *Finance and Development*, September 2003, 24-26.
- Berg, A., & Borensztein, E. (2000). The choice of exchange rate regime and monetary target in highly dollarized economies. *Journal of Applied Economics*, 3(2), 285-324.
- Berkmen, S. P., & Cavallo, E. (2010). Exchange rate policy and liability dollarization: What do the data reveal about causality? *Review of International Economics*, 18(5), 781-795. <http://www.blackwellpublishing.com/journal.asp?ref=0965-7576>
- Corrado, G. (2007). An open economy model with currency substitution and real dollarization. *Journal of Economic Studies*, 35(1), 69-93.
- Eichengreen, B., & Hausmann, R. (1999). *Exchange rates and financial fragility*. New challenges for monetary policy: A symposium sponsored by the

- Federal Reserve Bank of Kansas City, Jackson Hole, Wyoming, August 26-28, 1999 (pp. 329-368).
- Elbadawi, I., & Majd, N. (1996). Adjustment and economic performance under a fixed exchange rate: A comparative analysis of the CFA zone. *World Development*, 24(5), 939-951.
- Girton, L., & Roper, D. (1981). Theory and implications of currency substitution. *Journal of Money, Credit and Banking*, 13(1), 12-30.
- Gruben, W. C., & McLeod, D. (2004). *Currency competition and inflation convergence* (Working Paper: No. 0204). Federal Reserve Bank of Dallas, Center for Latin America.
- Havrylyshyn, O., & Beddies, C. H. (2003). Dollarization in the former Soviet Union: From hysteria to hysteresis. *Comparative Economic Studies*, 45(3), 329-357.
- Honig, A. (2009). Dollarization, exchange rate regimes and government quality. *Journal of International Money and Finance*, 28(2), 198-214.
- Isakova, A. (2008). Monetary policy efficiency in the economies of Central Asia. *Finance a Uver/Czech Journal of Economics and Finance*, 58(11-12), 525-553. Retrieved from <http://journal.fsv.cuni.cz/mag/article/show/id/1147>.
- Karacal, M. (2005). *Does dollarization really matter? An empirical investigation of the Turkish Economy*. (PhD thesis, The University of Wisconsin-Milwaukee).
- Kim, C.-J., Nelson, C. R., & Piger, J. (2004). The less-volatile U.S. economy: A Bayesian investigation of timing, breadth, and potential explanations. *Journal of Business and Economic Statistics*, 22(1), 80(14).

- Kurasawa, K., & Marty, A. L. (2007). 'Optimal' inflation under dollarization. *Journal of International Money and Finance*, 26(2), 251-264.
- Lay, S. H., Kakinaka, M., & Kotani, K. (2012). Exchange rate movements in a dollarized economy: The case of Cambodia. *ASEAN Economic Bulletin*, 29(1), 65-78. Retrieved from http://muse.jhu.edu/journals/asean_economic_bulletin/
- Leiderman, L., Manio, R., & Parrado, E. (2006). *Inflation targeting in dollarized economies* (IMF Working Paper: WP/ 06/157). Washington, D.C.: International Monetary Fund.
- Payne, J. E. (2009). Official dollarization in El Salvador and the inflation-inflation uncertainty Nexus. *Applied Economic Letters*, 16(12)1195-1199.
- Reinhart, C. M., Rogoff, K. S., & Savastano, M. A. (2003). *Addicted to dollars* (NBER Working Papers: 10015). Cambridge, Massachusetts: National Bureau of Economic Research. Retrieved from <http://www.nber.org/papers/w10015.pdf>
- Rojas-Suarez, L. (1992). *Currency substitution and inflation in Peru* (IMF Working Paper: WP/92/33). Washington, D.C.: International Monetary Fund. Retrieved from http://www.cgdev.org/doc/experts/Currency_Sub_in_Peru.pdf
- Yeyati, E., L. (2006). Financial dollarization: Evaluating the consequences. *Economic Policy* 21(45), 61-118.
- Yinusa, D. O. (2008). Between Dollarization and Exchange Rate Volatility: Nigeria's Portfolio Diversification Option. *Journal of Policy Modeling*, 30(5), 811-826.