A MODEL OF LIABILITY DOLLARIZATION AND MYOPIC GOVERNMENTS

Adam Honig
Department of Economics
Amherst College*

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Abstract

Liability dollarization of the domestic banking system represents a source of vulnerability for emerging market countries. The root cause is a lack of faith in the domestic currency, which ultimately stems from the belief that the government will not follow policies that promote long-run currency stability. This paper presents a model in which government myopia determines the unofficial dollarization of bank credit. Specifically, myopic politicians will choose low interest rates to expand short-run output in order to get re-elected, but this choice has the long-run consequence of increasing dollar lending. Increased liability dollarization is shown to force the hand of future decision-makers into choosing fixed exchange rates because of the fear that large depreciations will destroy balance sheets. The results imply that institutional reforms are necessary to reverse liability dollarization.

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* Correspondence: Adam Honig, Department of Economics, Campus Box 2201, Amherst College. Amherst, MA 01002-5000. Email, ahonig@amherst.edu. Phone: (413) 542-5032. Fax: (413) 542-2090.

1. Introduction

The question of why some societies suffers from severe volatility, financial crises and contagion is one of the most critical in international macroeconomics, and there is a growing literature emphasizing the importance of institutions and governance in determining these macroeconomic outcomes (Acemoglu, et al. 2003; Tommasi, 2002). A central part of this question is the effect of institutions on liability dollarization of domestic banking systems, which is a source of vulnerability for emerging markets. If domestic banks and firms borrow in dollars from domestic residents or banks respectively, but earn revenue in pesos, then a depreciation of the peso increases the value of their liabilities without increasing the value of their assets.[1] This process reduces net worth and can lead to sharp contractions in output.[2] Firms have less collateral to borrow with and may be forced into bankruptcy. Banks have fewer resources to lend and are certainly less willing to lend to firms with less collateral. Thus, because of liability dollarization, currency crises can lead to full blown financial crises (Mishkin, 1996; De Nicoló, et al., 2003).

This process is one of the main reasons why many emerging markets exhibit a "fear of floating" (Calvo and Reinhart, 2002). Specifically, emerging markets are concerned about large exchange rate movements, particularly large depreciations, because of the effect on balance sheets, and thus policymakers limit exchange rate volatility. This restricts their ability to conduct independent monetary policy. The extreme case is that of a fixed exchange rate in which

[1] Liability dollarization of the domestic banking system represents part of the domestic component of "Original Sin" (Eichengreen and Hausman, 1999); that is the inability to borrow locally in local currency.

[2] Bleakley and Cowan (2002) do not find evidence of a negative balance sheet effect of depreciations on 480 firms from five Latin American countries. However, as Galindo, et al., (2003) point out, there are some econometric problems with the empirical methodology. The *Emerging Markets Review* published a special issue analyzing balance sheet effects from firms in six Latin American countries. Most of the included studies found negative balance sheet effects of deprecations on investment, suggesting that banks do not hedge their dollar liabilities by lending in dollars to firms.

emerging markets and developing nations completely abdicate their role in monetary policy, as the only solution, even though this may be a sub-optimal outcome. For these reasons, liability dollarization is one of the central issues in open economy macroeconomics.

In Honig (2002), I argue that liability dollarization results from a lack of confidence in the domestic currency, which ultimately stems from the belief that the government will not follow policies that promote long-run currency stability. I present empirical evidence that indicators of government quality are highly correlated with liability dollarization. In this paper, I propose a specific channel through which institutional quality and governance affect liability dollarization. I present a model in which liability dollarization is determined by the myopic tendencies of emerging market politicians.[3] Myopic politicians will engage in expansionary monetary policy to expand short-run output in order to get re-elected, but this choice has the long-run consequence of increasing dollar lending.

The rest of the paper is organized as follows. Section 2 presents a model in which government myopia determines the dollarization of bank credit. Section 3 summarizes the findings and draws policy implications.

2. The Model

2.1. General Framework and Timing of Events

Existing theoretical work on the unofficial dollarization of banking systems has focused on portfolio selection models (Ize and Levy-Yeyati, 2003; Catão and Terrones, 2000).

[3] One could easily argue that most politicians are myopic, not just those in emerging markets. However, it is likely that it is easier to engage in myopic behavior in emerging markets in which there is a greater degree of corruption, less restraints by a strong bureaucracy, less respect for the rule of law, less freedom of the press and finally a less educated population to hold politicians accountable. Similarly, myopic politicians may have a greater probability of being elected given the lack of sound institutions.

Incorporating elements from that literature into a broader story about firm balance sheets (following Aghion, et al., 2000) and myopic politicians, I develop a three-period model in which government decisions in the first period affect outcomes not only in the second period but also in the third. If, for example, a government chooses an expansionary policy in the first period by lowering interest rates, domestic peso lenders will adjust their portfolio and increase the amount of dollar lending, thus increasing the level of unofficial dollarization in the economy. There is, however, a lag in the portfolio adjustment process so that some of the increase in dollar lending spills over into the second period, leading to an increased expected loss in the third period. Therefore, the government, which places a certain weight on the loss function for each period, will set policy in order to minimize the combined loss function knowing that decisions that reduce loss and stimulate output in the second period might increase the loss in the last period. In this model, government myopia is captured by the extent to which government's discount the future in order to obtain short-run benefits. Responsible politicians put more weight on the long-run consequences of current policy and thus resist overly expansionary policy that promotes unofficial dollarization and thus vulnerability to exchange rate movements.

The model also shows how government myopia affects the choice of exchange rate regime. Irresponsible politicians who over-stimulate the economy in the first period force next period's decision-makers into fixing their exchange rate, a sub-optimal outcome, over a floating regime because of the expected loss that a high level of loan dollarization entails. In contrast, a government concerned about the future but faced with a high level of unofficial dollarization in the first period might decide that instead of pegging today, which minimizes the one-period loss, it is better to implement contractionary monetary policy and incur a large loss today in order to reduce unofficial dollarization. This will allow tomorrow's outcome to dominate that of a fixed

exchange rate. The rest of this section is organized as follows. I first present the two-period model and then develop the three-period model to show how the inter-temporal nature of government decisions affects both unofficial dollarization in emerging markets and the choice of exchange rate regime.

Consider first a two-period small open-economy model. At the beginning of period one, the exchange rate is e_1, the price level is p_1 and output is Y_1. The central bank, which is assumed to be subservient to the will of politicians, then sets the interest rate for the period, i_1. I assume that there is an initial fixed amount of real borrowing. All firms earn revenue in pesos. A proportion α_1 of borrowers borrow in dollars at the fixed world interest rate i^f and a proportion $1-\alpha_1$ of borrowers borrow in pesos at i_1. Banks with mean variance preferences determine the currency composition of lending to firms. As discussed later, peso lenders index their loans to inflation.

Uncovered interest rate parity holds so that $i_t - i^f = E_t(e_{t+1}) - e_t$. In addition, $e_{t+1} = E_t(e_{t+1}) + \varepsilon_{t+1}$ where the unanticipated exchange rate shock ε_{t+1} accounts for investor confidence, sudden stops or contagion, all sources of vulnerability for emerging markets. The shock has mean zero and variance σ_ε^2. Inflation during period one is given by

$$\pi_2 = p_2 - p_1 = \gamma(e_2 - e_1) \tag{1}$$

where γ is the pass-through coefficient. Thus monetary policy and the exchange rate shock affect the nominal exchange rate, inflation and the real exchange rate. Combing the interest parity condition with the specification for the exchange rate yields

$$e_2 - e_1 = i_1 - i^f + \varepsilon_2 \tag{2}$$

Thus at the end of period one and the beginning of period two, the exchange rate is e_2 and prices are p_2.

2.2. Government

The government, which controls the setting of nominal interest rates through the central bank, is run by politicians who are interested in getting re-elected at the beginning of period two.[4] Government myopia is measured by the extent to which governments discount the future in order to obtain short-run benefits. Responsible politicians put more weight on the long-run consequences of current policy and thus resist overly inflationary policy that promotes unofficial dollarization and thus vulnerability to exchange rate movements. They set i_1 for the first period in order to minimize

$$E_1 L_2 = -E_1 Y_2 + Var(Y_2) \tag{3}$$

The loss function is written in terms of expectations because of the depreciation shock, ε_2, which affects output and inflation, occurs at the end of period one after the government has set interest rates. I assume that the government maximizes next period's output rather than targeting output and that it is not concerned with inflation as in the standard Barro and Gordon (1983) loss function.[5] This modification rests on the assumption that the probability of re-election is an increasing function of output and that politicians are primarily concerned with re-election. The standard loss function in which output is targeted implies that governments are indifferent

[4] Assuming that politicians control monetary policy assumes that the central bank is not independent. This clearly suggests the need to design monetary institutions that are sufficiently independent from political institutions. It has been demonstrated empirically that monetary policies of more independent central banks tend to be less inflationary (e.g., Eijffinger and De Haan, 1996).

[5] Hausmann, et al. (2001) add a Barro and Gordon (1983) loss function to the model of Aghion, et al. (2000).

between output outcomes far above the target and far below the target. This is not consistent with a story of politicians focused on re-election. In Rogoff (1990), politicians, who derive utility from holding office, lower taxes or increase government spending during election years to get re-elected (the electorate cares only about consumption), creating a political budget cycle. Those assumptions imply a loss function similar to the one used here. The Barro-Gordon loss function in which output is targeted implies that governments are indifferent between output outcomes far above and below the target. This is not consistent with a story of politicians focused on re-election. Finally, I assume that politicians are risk averse and therefore dislike volatility in output that reduces the utility of the public, thereby decreasing the probability of re-election.

2.3. Lenders

The value for α_1, the proportion of lending in dollars, is determined by lenders who choose the optimal mix of peso and dollar lending based on differences in expected returns and volatility. Specifically, at the beginning of period one, lenders observe monetary policy and adjust the currency composition of their lending accordingly. Lenders are also averse to volatility in their returns caused by depreciation shocks. These shocks generate real exchange rate volatility that affects the return to lending in dollars and inflation volatility that affects the return to lending in pesos.

I assume that peso lenders respond to inflation volatility by indexing their loans to inflation, implying that the government-set nominal interest rate is also the real interest rate on peso loans. Without indexation, uncovered interest rate parity implies that the expected returns to lending in dollars and pesos are equal and, therefore, the currency composition of lending is

determined by relative volatilities to lending in dollars and pesos. The share of dollar lending then becomes the proportion of dollar loans in the minimum variance portfolio (Ize and Levy Yeyati, 2003). This implies that the central bank, which chooses the nominal peso interest rate for the period, does not affect the currency composition of lending and, therefore, government myopia does not affect dollarization.

Although the minimum variance portfolio analysis developed in Ize and Levy Yeyati (2003) is the benchmark for analyzing dollarization, it fails to explain half of the variation in dollarization in their sample. Banks may have market power and thus decide the currency composition of lending. Furthermore, the optimal portfolio can differ from the minimum variance portfolio if banks accept a higher risk in return for a higher expected return (Honohan and Shi, 2003). Allowing peso lenders to index their loans to inflation allows for a difference in expected returns to lending in dollars and pesos despite uncovered interest parity holding. In that case, both differences in expected returns and volatilities affect the currency composition of lending, and the central bank plays a role in influencing this decision.

When lending in dollars, the banks' real return in peso-denominated goods is,

$$(P_1 / E_1)(1+i^f)E_2(1/P_2) - (1/P_1)P_1 \tag{4}$$

If I approximate simple depreciation and interest rates with their continuously compounded counterparts, I can write the real return as,

$$i^f + e_2 - e_1 - (p_2 - p_1) = i^f + (1-\gamma)(i_1 - i^f + \varepsilon_2) \tag{5}$$

Assuming that lenders have mean variance preferences over the real return in peso-denominated goods, I can then write the lenders' optimization problem as:

$$\max_{\alpha_1} \begin{pmatrix} \alpha_1[i^f + E_1 e_2 - e_1 - (E_1 p_2 - p_1)] \\ +(1-\alpha_1)(i_1) \end{pmatrix} - Var \begin{pmatrix} \alpha_1[i^f + E_1 e_2 - e_1 - (E_1 p_2 - p_1)] \\ +(1-\alpha_1)(i_1) \end{pmatrix} \quad (6)$$

From the first order condition, the optimal proportion of dollar lending is

$$\alpha_1^* = \frac{\gamma(i^f - i_1)}{2(1-\gamma)^2 \sigma_\varepsilon^2} \quad (7)$$

It follows that $\partial \alpha_1^* / \partial i_1 < 0$ and $\partial \alpha_1^* / \partial \sigma_\varepsilon^2 > 0$. Thus a reduction in peso interest rates this period or greater exchange rate volatility prompt lenders to increase the proportion of dollar lending.[6] Since there is only volatility to lending in dollars because peso lenders index to inflation, the optimal proportion of dollar lending is zero if the expected return to lending in dollars exceeds the expected return to lending in pesos, which reduces to $i^f < i_1$.

There is, however, a lag in portfolio adjustment so that the actual proportion of dollar lending this period, α_1, is given by

$$\alpha_1 = \alpha_0 + \lambda(\alpha_1^* - \alpha_0) \quad (8)$$

Thus, lower interest rates in period one not only increase the proportion of dollar lending during period one but also in period two as well. Kearney and MacDonald (1985) present empirical evidence of significant lags in portfolio adjustment. This can be justified theoretically with the presence of transactions costs.

2.4. Output and Firm Debt

The specification for output follows Aghion, et al. (2000) although I extend their model to include an extra period so that I can analyze the inter-temporal effects of government policy,

[6] I would get the same results if I incorporated the possibility of dollar loan default. For simplicity, I do not include dollar loan default in the model because the main result of the model is unchanged, that expansionary monetary policy in period one leads to higher levels of dollar lending and larger losses in the future.

specifically the effect on the currency composition of lending. Their approach allows us to analyze the effect of government policy and depreciations on firm balance sheets and therefore on output as well.

They assume a linear production technology and that capital, which fully depreciates within one period, is the only input in production. Thus I can write $Y_t = \sigma K_t$. Because of credit constraints, firms can only borrow an amount $D_t = \mu W_t$ proportional to their wealth. Therefore, at the beginning of the period, the total capital stock is $K_t = W_t + D_t = (1+\mu)W_t$. Output then becomes a linear function of firms' wealth:

$$Y_t = \sigma(1+\mu)W_t . \tag{9}$$

If no profits are distributed, current wealth is equal to the real value of profits in the previous period. In other words, $W_{t+1} = \Pi_t$ where Π_t represents real profits from the previous period, implying that $Y_{t+1} = \sigma(1+\mu)\Pi_t$. Therefore, total output at the beginning of period two is given by

$$Y_2 = \sigma(1+\mu)\begin{pmatrix}(1/P_2)(P_2(1-\alpha_1)Y_1) - (1-\alpha_1)D_1(1+i_1) + \\ (1/P_2)(P_2\alpha_1 Y_1) - \alpha_1 D_1(P_1/E_1)(1+i^f)E_2(1/P_2)\end{pmatrix} \tag{10}$$

where D_1 and Y_1 are exogenous initial parameters, i^f is the foreign interest rate, prices and exchange rates are written in levels and the term in brackets represents real profits for peso and dollar lenders. All goods are sold and all loans are paid back at the end of the period after any inflation or depreciation has occurred so that the appropriate selling price and price level is P_2. If I let $D_1 = 1$, $\sigma(1+\mu) = 1$ and approximate simple depreciation and interest rates with their continuously compounded counterparts, I can write

$$Y_2 = Y_1 - (1-\alpha_1)i_1 - \alpha_1[i^f + (e_2 - e_1) - (p_2 - p_1)] \quad (11)$$

Thus, output is a negative function of the balance sheet position of firms. A depreciation that increases the value of the liabilities of firms borrowing dollars will therefore reduce output and increase the loss. However, the inflation caused by the depreciation mitigates the harm to balance sheets because it reduces the real value of the extra pesos that are required to pay back the dollar loan. Thus, as Honohan and Shi (2003) assert, if pass-through is fast, then local borrowers may be able to assume the exchange risk of a dollar loan even if they do not earn revenue in pesos. In other words, dollar borrowers are hurt by real exchange rate depreciations but not necessarily by nominal depreciations. Indexation implies that inflation volatility does not contribute to output volatility because the balance sheets of peso borrowers are not affected by inflation. Therefore, output volatility in this model is only caused by the effect of real exchange rate depreciation on the balance sheets of dollar borrowers. Thus the model focuses on the risks posed by liability dollarization and currency mismatch. The problem of sudden stops in emerging markets indicates the importance of exchange rate movements as a source of output volatility.

2.5 Solving the Two-Period Model

Substituting equations (1), (2), (7), (8) and (11) into the government's loss function $E_1L_2 = -E_1Y_2 + Var(Y_2)$, which is convex in i_1, and taking the first order condition, I find that

$$i_1^* = i^f + \frac{(1-\gamma)^2\sigma_\varepsilon^2[\alpha_0\gamma(1-\lambda)(1+\lambda)-1]}{\lambda\gamma(1-\lambda/2)} \quad (12)$$

where $\alpha_0\gamma(1-\lambda)(1+\lambda)-1<0$. In the two-period model, the peso interest rate is less than the dollar interest rate so that in equilibrium, there is a positive amount of dollar lending. The reason is that lowering the peso interest rate increases output by reducing the amount that peso borrowers have to repay at the end of the period. Although raising i_1 reduces volatility in output by reducing the amount of dollar lending, the first effect dominates. An increase in α_0, the level of dollarization in the previous period, leads to an increase in the optimal peso interest rate as the government reduces the share of dollar lending by increasing the return to peso lending. This will limit volatility in output that the government hopes to avoid. An increase in the variance of the exchange rate similarly leads to an increase in the peso interest rate.

2.6 The Three-Period Model

Suppose now that there are three periods and that the world ends after the last period. Decision-makers at the beginning of period two minimize E_2L_3, performing a similar optimization as in the two period model. At the beginning of period one, the government knows what the optimal response will be of policy-makers at the beginning of period two. Thus, at the beginning of period one, the government performs the following optimization:

$$\min_{i_1} E_1L = \beta E_1L_2 + (1-\beta)E_1L_3^*, \tag{13}$$

where β is the weight placed on next period's loss and $1-\beta$ is the weight placed on the last period's loss. If the government places positive weight on the loss in the last period, then policy-makers will take into account the effect that i_1 has on $E_1L_3^*$.

Since $\partial\alpha_1^*/\partial i_1<0$ and $\partial\alpha_1/\partial\alpha_1^*>0$, a reduction in interest rates in period one leads to an increase in the proportion of dollar lending in period one, α_1, so that $\partial\alpha_1/\partial i_1<0$. However,

because of lagged portfolio adjustment, this effect carriers over to period two. Specifically, $\alpha_2 = \alpha_1 + \lambda(\alpha_2^* - \alpha_1)$ and therefore an increase in α_1 leads to an increase in α_2, the share of dollar lending in period two. Thus a government that lowers interest rates in the first period increases the level of dollar lending next period, all else equal ($\partial\alpha_2 / \partial i_1 < 0$). Next period's decision makers will be forced to choose a higher interest rate than they otherwise would in order to limit output volatility by reducing the amount of dollar borrowing ($\partial i_2^* / \partial i_1 < 0$).

The government, however, cannot completely eliminate dollar lending as some carries over from the previous period. This effect increases output volatility. In addition, raising interest rates next period imposes a loss as peso borrowers are forced to pay more to borrow. Thus, there is an inter-temporal effect of monetary policy today on the loss in the last period through the increase in dollar lending next period. This is the channel through which expansionary policy in the first period leads to large expected losses in the last period. Therefore, the more weight that politicians in the first period place on the loss in the last period, the higher the optimal interest rate today.

If we let $\beta = 0$ so that the government in the first period puts full weight on minimizing the loss in the last period and assume that $\alpha_0 = 0$ for simplicity, the first order condition yields

$$i_1^{**} = i^f + \frac{(1-\gamma)^2 \sigma_\varepsilon^2}{(1-\lambda)^2 \gamma^2 / 2} \tag{14}$$

where i_1^{**} is the new optimal interest rate taking the future into account. Notice that $i_1^{**} > i_1^*$ where i_1^* is the optimal interest rate from the two period problem. In fact, $i_1^{**} > i^f$ so that the optimal share of dollar lending in the first period is zero. Thus the non-myopic government reduces dollarization as much as possible so that the minimal amount of dollar lending carries

over to the next period, reducing output volatility in the future. The larger the variance of the exchange rate, the higher the optimal interest rate.

More generally, $\partial i_1^{**} / \partial \beta < 0$, $\partial \alpha_2 / \partial \beta > 0$ and $\partial (E_1 L_3^*) / \partial \beta > 0$. In other words, the more weight that politicians put on short-run benefits, the lower the interest rate today, the greater the dollar debt tomorrow and the larger the expected loss tomorrow. Thus, government myopia determines unofficial dollarization while floating regimes need not be correlated with high levels of dollarization. For example, a discretionary monetary policy regime combined with a government that has a low discount factor will generate low levels of dollarization. These theoretical results match the empirical results in Honig (2002), which finds that improvements in government quality significantly reduce dollar credit, while the exchange rate regime has no effect.

Although the effect of i_1 on $E_1 L_3^*$ is ambiguous because $E_1 L_3^*$ is convex in i_1, since $i_1^* < i_1^{**} < i_1^{**}(\beta = 0)$, the effect of an increase in i_1 from a starting point of i_1^* is to reduce $E_1 L_3^*$, while lowering i_1 from $i_1^{**}(\beta = 0)$ leads to an increase in $E_1 L_3^*$. Thus the effect of interest rates in this first period on the expected loss in the last period is unambiguous over all possible values of i_1^{**}, which corresponds to the downward-sloping portion of $E_1 L_3^*$. Therefore, I can conclude that expansionary policy in the first period, which involves setting interest rates that are far below the optimal value for the last period, can lead to large losses in the last period. This implies that an increase in interest rates from the myopic first period level will reduce losses in the last period and that the more weight the government in period one places on outcomes in period three, the higher the interest rate it will set today.

The extent to which politicians in period one discount the future also affects the choice to fix the exchange rate at the beginning of period two.[7] Specifically, $\partial(E_2 L_3^* - L_3 fix)/\partial\beta > 0$.[8] In other words, the more weight the government places on the present, the lower interest rate today and therefore the higher the loss to discretion tomorrow. Thus, a government that discounts the future heavily will choose a lower interest rate in period one, thus forcing the hand of decision-makers in period two into pegging, a sub-optimal outcome compared to discretion with lower levels of dollar debt. This result captures the experience of many emerging market countries. High inflation has led to unofficial dollarization, which has instilled a fear of floating even though less flexible exchange rate regimes may be second best policies. Thus the need to reverse liability dollarization is paramount in countries that should otherwise have floating exchange rates.

Not only does improving government quality and therefore reversing dollarization allow more flexibility in the choice of exchange rate regime, but it also affects the choice itself. Improvements in government credibility mitigate the time inconsistency problem so that official dollarization is no longer needed as a mechanism to ensure commitment (Chang and Velasco, 2003). In addition, as discussed in Mishkin and Savastano (2001), partial dollarization poses problems for inflation targeting regimes (as well as other more flexible arrangements). Therefore, improving government quality will also increase the viability of an inflation targeting regime. In general, the independent monetary policy that accompanies a more flexible exchange rate regime is more effective in low dollarization environments in which policymakers do not

[7] Under a fixed exchange rate, there are no exchange rate shocks and the government sets depreciation to zero.
[8] Even if a low interest rate in period one forces decision makers next period into pegging because of the increase in liability dollarization, the result still holds that myopic behavior in period one leads to larger losses in the last period. The reason is that with non-myopic governments in the first period, choosing a discretionary regime in period two dominates the choice to fix the exchange rate. However, myopic behavior in period one forces the choice to peg next period, a choice that is dominated by discretion.

have to worry that expansionary policy will lead to a depreciation that harms firm and bank balance sheets. Alesina and Wagner (2004) show empirically that countries with better institutional quality tend to choose more flexible exchange rate arrangements, confirming the predictions of this model.

To this point, I have been referring to liability dollarization as the *domestic* dollar borrowing of domestic firms by domestic banks. I have argued that government myopia in emerging markets countries is a key determinant of this phenomenon. However, in a recent paper, Eichengreen, et al. (2002) argue that emerging markets are forced to borrow *externally* in one of the major currencies because the currencies of small countries offer little diversification benefits to foreign lenders relative to the additional transactions costs they imply, irrespective of country heterogeneity. If this is true, then improvements in government credibility and reductions in inflation will not reduce the proportion of *external* borrowing that is foreign currency denominated. However, building a reputation for sound monetary and fiscal policy can still reverse (domestic) unofficial dollarization. In addition, building a track record of low inflation will spur the growth of domestic capital markets requiring less foreign borrowing (Jeanne, 2003). Burger and Warnock (2003) find that countries with stronger institutions have larger local currency bond markets.

3. Conclusion

This paper demonstrates theoretically that institutional quality and government myopia in particular is a key determinant of liability dollarization and therefore emerging market vulnerability. This result implies that improving the institutions of government can lead to a reduction in the degree of dollarization. Thus, although countries cannot erase a history of high

inflation, there is still hope that they can reverse the dollarization process by building a reputation for sound policy and good governance. In other words, emerging markets can achieve redemption from "Original Sin" (Eichengreen and Hausman, 1999) in the domestic sense.

The model also demonstrates that myopic behavior can force the hand of future decision-makers into fixing their exchange rates, even though they may be sub-optimal choices. Ideally, the choice of exchange rate regime should be based on optimum currency area considerations (Mundell, 1961; McKinnon, 1963). Therefore, reducing liability dollarization will provide both flexibility and optimality to the choice of exchange rate regime.[9] Policies aimed at limiting myopic behavior of the fiscal and monetary authorities through increased transparency and accountability are central to reversing the dollarization process. As Calvo and Mishkin (2003) put it, "it's the institutions stupid".

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[9] Forced measures to de-dollarize an economy such as punitive reserve requirements and mandatory holding periods for dollar deposits are almost always met with significant capital flight and declines in bank credit (Reinhart, et al., 2003). Thus de-dollarizing without improving government quality involves significant costs.

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