

Lecture 21: Dollarization and Economic Performance

I. OVERVIEW

- By now, you are more than familiar with the importance of having a nominal anchor for monetary policy. The two most commonly used nominal anchors these days are exchange rates and inflation targets.
- We discussed extensively the advantages of using inflation targets as an anchor for monetary policy, in terms of allowing monetary policy flexibility in the short run while keeping inflation under control in the long run.
- In the Clarida, Gali and Gertler paper we discussed some of the dangers of exchange rate anchors: monetary policy becomes extremely vulnerable to external shocks, to the extent that policy is guided more by what is happening abroad than by what is happening at home. The ERM crisis, the East Asian crisis, the Russian crisis, the Argentinean crisis, the Brazilian crisis have all driven home the dangers of having a exchange rate anchor.
- Curiously, the response to the failure of these fixed exchange rate systems has been to take two very different tracks: one is to abandon exchange rate anchors altogether and move towards inflation targets, the other is to adopt even more strict exchange rate anchors by adopting another country's currency.
- In other words, countries that feel like they can design good monetary policy institutions have gone down the route of inflation targeting while countries that feel like they can't have decided to adopt either common currencies or become dollarized.
- Today's paper looks at the performance of dollarized economies. The goal is to see what the empirical evidence has to say about the benefits of dollarization.

II. INTRODUCTION TO THE EDWARDS/MAGENZO PAPER

- Edwards and Magenzo take a closer look at the real economy of dollarized countries. One goal of dollarization is to reduce inflation and import a more credible monetary policy - there is little disagreement that these countries have been able to accomplish disinflation.
- Economic theory tells us that the effect of dollarization on real variables is ambiguous. On the one hand, dollarization is the strictest form of fixed exchange rates there is, so many of the problems outlined in Clarida, Gali and Gertler about adopting another country's monetary policy are applied in the extreme here.
- On the other hand, if domestic policy is bad enough importing the credibility and independence of an external central bank is a net positive for the economy. Furthermore, adopting a major international currency as ones own can lead to lower inflation, lower interest rates, more foreign investment and hence faster growth.

- The basic point is that exchange rate anchors, while not suitable for many countries are especially not a good match for wealthy economies that can build the institutions necessary to do inflation targeting.
- However, such anchors are not a bad idea at all for poor countries with bad monetary policy making institutions. Given the vulnerability of standard fixed exchange rate systems (as seen by the crises in Asia and Latin America in the 1990s), it is perfectly reasonable that some of these countries will gravitate towards dollarization. This paper assesses the impact of such a decision.
- What is unique about the Edwards/Magendzo paper is that it is really looking at countries that dollarized (i.e. adopted another country's currency) instead of countries that formed a currency union (i.e. adopted a common currency but not necessarily another country's currency). Since adopting the currency of a developed nation will bring more credibility the results from this study may be more informative for countries deciding which path to take for their nominal anchor choice.
- They have a list of 20 dollarized economies: Liberia, Marshall Islands, Micronesia, Palau, Panama, Puerto Rico (U.S. dollar), Andorra, French Guiana, Guadeloupe, Martinique, Monaco, Reunion (French Franc, then Euro), Greenland (Danish Kroner), San Marino (Italian Lira, then Euro), Luxembourg (Belgian Franc, then Euro), Cook Islands (NZ dollar), Kiribati, Tonga, Nauru (Aus. dollar).

III. METHODOLOGY OF THE EDWARDS/MAGENZO PAPER

- The critical methodological issue is the concern about endogeneity - countries may be choosing to dollarize because of past or anticipated future economic weakness. Since there is two way causation between dollarization and the state of the economy, we will get biased results if we just try to run a simple OLS regression of economic performance on whether or not a country is dollarized.
- In more technical terms we have to worry about whether we have an appropriate "control group" (i.e. undollarized economies) to compare with the "treatment group" (i.e. dollarized economies) because there may be reasons to think that the undollarized economies are fundamentally different from the dollarized ones.
- Edwards and Magendzo seek to overcome this complication by controlling for the probability of being a dollarized economy in conjunction with estimating the impact of dollarization on economic performance.
- Edwards and Magendzo use data from 1970-98 to estimate their model. Their model is described by the following equations:

$$y_{jt} = x_{jt}\beta + \gamma\delta_{jt} + \mu_{jt}$$

- The y variable is either the level or volatility of per-capita GDP growth. The x variables are a collection of variables that typically affect economic performance, δ_{jt} is a dummy variable that indicates whether or not a country is dollarized and μ is the error term.

- δ is potentially endogenous in that countries that choose to dollarize may have some unobservable characteristic that both affects their economic performance adversely and leads them to dollarize. This will bias our results as we will tend to think that dollarization makes things worse than they actually are (b/c countries with, for example negative monetary shocks, tend to have worse outcomes and also to dollarize but it is not dollarization that is driving the worse outcomes). So we have to come up with a participation equation which is defined as

$$\delta_{jt} = \begin{cases} 1, & \text{if } \delta_{jt}^* > 0 \\ 0, & \text{otherwise} \end{cases}$$

where

$$\delta_{jt}^* = w_{jt}\alpha + \epsilon_{jt}$$

- The w variables are a collection of variables that are correlated with a country's decision to dollarize and ϵ is the error term, which is assumed to be correlated with the error term μ from the performance equation.

The Treatment (Dollarization) Equation

- The treatment equation looks at the factors that are correlated with a country's decision to dollarize. This draws heavily on a literature known as "optimal currency areas" first introduced by Robert Mundell.
- The theory of optimal currency areas says that a group of regions should adopt the same currency when the following conditions are satisfied.
 - There are few asymmetric shocks - shocks that hit one country or part of a region but not the other countries or parts of the region.
 - There is a high degree of factor mobility and/or wage flexibility (so labor markets can adjust more easily to the shock)
 - There is a centralized fiscal policy (so we can make redistributions from one part to another).
- Edwards and Magendzo also draw from the political economy literature which talks about decisions to adopt fixed exchange rates being driven by powerful interest groups.
- Among the covariates that Edwards and Magendzo use are:
 1. Whether or not a country is an independent nation: labor mobility is weaker across nations than between colonies or territories. This is expected to have a (-) effect on dollarization.
 2. Whether or not the country or region has a common border with a country that has a "convertible currency", i.e. a currency that is widely accepted across the world. This is expected to have a (+) effect since the benefits in terms of increased trade and finance could be considerable for the adopting country given its favorable geographical location.
 3. Whether or not the country is an island/archipelago, this will reduce labor mobility and thus will have an expected (-) coefficient.

4. The political economy motivation is captured by an index of credibility, measured as a combination of proper legal system, independence, political instability, neighbors inflation rates and a large (non-oil) export sector. These factors are used in the literature to identify countries that have not built good monetary institutions and hence are more likely to dollarize. The expected sign is (-) because countries with better institutions are less likely to seek credibility from external sources by dollarizing.
5. In addition to the above variables they also had population (-), economic size (-), distance from global markets (-) as explanatory variables.

- The results from the dollarization equation are given in the lower section of Table 2.

The Outcomes Equation

- The outcomes equation looks at the factors that are correlated with a country's economic performance, with special emphasis being placed on the dollarization dummy variable.
- Among the covariates that Edwards and Magendzo use to explain economic performance are:
 1. Initial GDP: countries that are initially poorer can grow faster controlling for other determinants of growth.
 2. Openness: whether or not a country is open to trade and financial flows with the rest of the world.
 3. Geography: controlling for countries that lie close to the equator.
 4. Regional dummies: which control for regional trends as well as other things like differences in trade and capital intensity that don't change much over time but differ across regions.
- The results from the performance equation are given in the upper section of Table 2.

IV. RESULTS

- What do the results of Edwards and Magendzo show? In the treatment equation, we find that small countries which are not independent nations, that share a border with a country that has a major currency, are open to trade and financial flows and have weak institutions are more likely to dollarize.
- In terms of outcomes, the first column in Table 1 reports that dollarized economies do not grow faster than non-dollarized economies (the coefficient is insignificantly different from zero). The results don't change much when we control for regional differences nor if we restrict the study to analyzing growth over 5 year periods.
- On the volatility side, we find that dollarized economies have more volatile GDP growth than non-dollarized economies. Dollarized economies have a standard deviation of GDP growth that is 2.1 percentage points higher than non-dollarized economies. This is consistent with the negative hypothesis about dollarization: i.e. that it leads to more instability and importing of external shocks.

Robustness Check

- How robust are these results? Edwards and Magendzo provide two important robustness checks. The first, is a technique called matching estimators, which basically tries to compare a dollarized economy with a very similar non-dollarized economy. This method has the advantage of not requiring any particular model to be estimated but has the disadvantage that it requires us to find a good alternative partner economy.
- The simple, yet, elegant solution to the latter problem is to find countries that have the same probability of dollarization and look at the difference between those who were treated and those who were not treated (i.e. those who dollarized and those who did not).
- They used the five countries with the nearest likelihood of dollarization for each dollarized economy and examined the difference between the dollarized economy and the non-dollarized economies. They find that dollarization reduces GDP growth by 1.11% and raises the volatility by 1.18%, in other words even stronger results against dollarization.
- They also allow for the possibility that they had the wrong control group in comparing countries that dollarize with all countries. Instead, they argue that the proper control group may just be countries with fixed exchange rate regimes (in other words the decision is rarely between dollarization and flexible exchange rates but instead between dollarization and fixed exchange rates).
- These results are reported in Table 3. The findings from earlier are confirmed: dollarization increases volatility and has an insignificant effect on growth.
- What does this all imply for our purposes? Countries that tie the hands of their monetary policymaker most severely are able to lower inflation but increase the volatility of real output as a result. They get no improved (but no worse) performance in terms of growth either.
- The results are mixed, then. On the one hand getting rid of the monetary policymaker improves outcomes, but on the other hand it induces more negative outcomes.