The “Pegging Practices” of LDC’s: A Look at Recent Behavior

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INTRODUCTION

One of the major developments in international monetary relations since the end of the Bretton Woods era has been the large number of changes in the exchange-rate arrangements of Third World countries. Of the roughly 103 Third World nations that were members of the IMF in 1976, when the Second Amendment to the Articles of Agreement was passed, 72 chose to peg their exchange rate to a single currency, 11 pegged to a basket of currencies, and 19 adopted more flexible, non-pegging, arrangements. The dollar was far and away the most prevalent currency peg, particularly in the West. Since then, the number of countries that peg to the dollar has declined, the number of pegs to other currencies has increased, and the number that have adopted floating or other arrangements has also increased. The main shift is that pegs to a single currency have declined, while pegs to a basket of currencies have increased, and pegs to other currencies have also increased. The shift in the number of pegs to a single currency is the most significant. It is not clear whether this shift is permanent or temporary. The shift in the number of pegs to a basket of currencies is also significant. It is not clear whether this shift is permanent or temporary. The shift in the number of pegs to other currencies is also significant. It is not clear whether this shift is permanent or temporary. There is a need for further research into the reasons for these shifts.

There is a good deal of theoretical and empirical evidence that certain national economic characteristics are important in determining the cost of different exchange-rate regimes, which in turn are important determinants of the actual exchange-rate arrangement chosen by countries. Following that line of reasoning, Bramson (1981) has suggested that the degree of diversification in a country’s trading pattern is an important determinant of the costs of a single currency peg relative to a basket peg (even though, he argues, it may not be an important determinant of the more general choice between pegging and floating.) Indeed, one of the better known and widely accepted, conclusions of the literature on the optimal peg is that the net benefits of a basket peg (over a single currency peg) tend to rise as the nation’s trading pattern becomes more diversified. The statistical tests discussed in the next section are intended to be tests of that conclusion. Thus we ask, “is it in fact the case that those nations with relatively more diversified trading patterns are the ones which have opted for a basket peg over a single currency peg?”

The third section discusses the results of tests to determine if those nations that have switched away from single currency pegs have also experienced significant increases in the diversification of their trading patterns. Additional tests reported in that section investigate whether the same relationship holds between trade diversification and other “more flexible” (non-basket pegging) arrangements as holds for basket pegging. This then provides a test of Bramson’s hypothesis noted above. These “more flexible” arrangements include independent floats, crawls, and countries that the IMF has classified as having adopted limited flexibility (vis-a-vis a single currency).

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The measure of trade diversification used throughout is calculated as the percentage of the total value of each nation's trade (imports plus exports) carried out with their major currency area. The currency areas lump together all dollar pegging countries as one currency area, all French franc pegging countries as another, all SDR pegging countries as a third currency area, and trust all other nations as individual currency areas. The idea behind a basket peg is to reduce the effective exchange rate variability of the home country. This is achieved by reducing the variability of the bilateral exchange rates between the home country and third parties which arise from variations in the bilateral exchange rates between the numerator currency and third party currencies. Since nations pegged to the same numerator (currency or basket) are essentially pegged to each other, the measure of trade diversification that is important must capture added trade with nations not pegged to that numerator. Hence the need to create data on trade with currency areas rather than just employ data for trade with individual nations.\footnote{$^5$}

**TRADE DIVERSIFICATION AND EXCHANGE ARRANGEMENTS**

This note studies the relationship between trading patterns and exchange arrangements by way of a series of hypothesis tests. These are tests for the difference in the mean percentage of trade done with the major currency area of nations with different exchange arrangements. More explicitly the first test carried out is the following:

$$H_0: \bar{X}_{it} - \bar{X}_{it} = 0$$

$$H_1: \bar{X}_{it} > \bar{X}_{it} > 0.$$  

Here $\bar{X}_{it}$ is the average value in 1984 of the percentage of trade carried out with their major currency area by nations that adopted single currency pegs in 1983.\footnote{$^4$} The average value is 32.7%. Correspondingly, $\bar{X}_{it}$ is the value in 1984 of the average percentage of trade contracted with their major currency area by nations that were "basket peggers" in 1985. The value of $\bar{X}_{it}$ is 21.5%, and on the basis of a t-ratio of 3.5 and 74 degrees of freedom the null hypothesis must be rejected at more than the 95% level of significance. The implication of this result is that basket peggers do indeed tend to have greater trade diversification than do single currency peggers.

**CHANGES IN DIVERSIFICATION AND SWITCHES FROM SINGLE CURRENCY PEGS**

The next series of tests focus on changes away from single currency pegs toward basket pegs and other more flexible arrangements. Hence the first test is:

$$H_0: (\bar{X}_{1985} - \bar{X}_{1977})_{85m} - (\bar{X}_{1977} - \bar{X}_{1977})_{77cp} = 0$$

$$H_1: (\bar{X}_{1985} - \bar{X}_{1977})_{85m} - (\bar{X}_{1977} - \bar{X}_{1977})_{77cp} > 0,$$

where $(\bar{X}_{1985} - \bar{X}_{1977})_{85m}$ denotes 1976 data for the average trade concentration of nations which were single currency peggers in 1977 but who had abandoned the single currency peg by 1985; it takes the value of 37.4%. While $(\bar{X}_{1977} - \bar{X}_{1977})_{77cp}$ denotes the average trade concentration in 1974 for those countries that in 1983 were not single currency pegs but had been such in 1977. It assumes the value of 30.5%. On the basis of a t-ratio of 1.44 and 46 degrees of freedom the null hypothesis must be rejected at between the 90 and 95% level. The implication is that between 1977 and 1985 trade concentration has declined for countries that abandoned the single currency peg.

However, a similar hypothesis test was undertaken for nations that did NOT switch from a single currency peg over that same period. That is, we tested:

$$H_0: (\bar{X}_{1985} - \bar{X}_{1977})_{85m} - (\bar{X}_{1977} - \bar{X}_{1977})_{77cp} = 0$$

$$H_1: (\bar{X}_{1985} - \bar{X}_{1977})_{85m} - (\bar{X}_{1977} - \bar{X}_{1977})_{77cp} > 0,$$

The results indicate that average trade concentration has also declined for this group, from 39.6% to 31.6%. On the basis of a t-ratio of 2.0 and 73 degrees of freedom the null hypothesis must again be rejected at over the 95% level. Hence taking these two tests together we conclude that trade concentration has declined over this period for all Third World nations, there thus seems to be little evidence that the switch away from single currency pegs has been caused by the increased trade diversification of those nations.

However, if we split the non-single currency peg (or other more flexible arrangements) the effect of increased trade diversification begins to emerge. Thus for the next hypothesis test consider:

$$H_0: (\bar{X}_{1985} - \bar{X}_{1977})_{85m} - (\bar{X}_{1977} - \bar{X}_{1977})_{77cp} = 0$$

$$H_1: (\bar{X}_{1985} - \bar{X}_{1977})_{85m} - (\bar{X}_{1977} - \bar{X}_{1977})_{77cp} > 0.$$  

Here we find that trade concentration declined from an average of 32.5% in 1976 to 22.2% in 1984. Based on a t-ratio of 1.8 and 20 degrees of freedom we must reject the null hypothesis at the 95% level of significance. On the other hand when we test:

$$H_0: (\bar{X}_{1985} - \bar{X}_{1977})_{85m} - (\bar{X}_{1977} - \bar{X}_{1977})_{77cp} = 0$$

$$H_1: (\bar{X}_{1985} - \bar{X}_{1977})_{85m} - (\bar{X}_{1977} - \bar{X}_{1977})_{77cp} > 0,$$

we find that the trade concentration of the group that changed from single currency pegging in 1977 to a more flexible (non-peg) in 1985 has not significantly declined. Thus the test data reveal that the average trade concentration in 1976 was 46.6% and in 1984 it was 40.7%. Based on a t-ratio of 0.6 and 20 degrees of freedom we cannot reject the null hypothesis.

Taking the last two tests together it may be surmised that the increase in trade diversification may well have been a reason for nations to switch from a single currency peg to a basket peg in this time period, but that it was not very likely to have been a cause for a switch from a single-currency peg to another more flexible, non-pegging, arrangement. This is as Branson (1981) has suggested. The shift to a more flexible arrangement may well have been motivated by several other factors.\footnote{$^6$}

Although hypothesis tests (2) and (3) reveal that both "switchers" and "non-switchers" have experienced a decline in trade concentration between 1976 and 1984, we might ask if the two groups of nations can be distinguishable by their original degree of trade diversification. Interestingly, that line of inquiry leads to some insights regarding the effects of the "overvalued" dollar since 1982 on Third World exchange arrangements. Thus, consider the following two hypothesis tests that differ only in the years of coverage, with test (6) including the same period during which the dollar could be regarded as "overvalued" and test (7) excluding that time.

$$H_0: (\bar{X}_{1985})_{77tcp} - (\bar{X}_{1985})_{77tcp} = 0$$

$$H_1: (\bar{X}_{1985})_{77tcp} - (\bar{X}_{1985})_{77tcp} > 0.$$
The test for hypothesis (6) produced a t-ratio of 0.22, on the basis of which we cannot reject the null hypothesis. Thus we must infer that the degree of trade diversification in 1976 for nations that did not abandon their traditional single currency peg by 1985 was no greater than the trade diversification of nations that did switch their exchange-rate arrangement. Hypoth-
esis test (7) asks the same question, but restricts the time by which a nation could leave their single currency peg to 1982. The results in this case are strikingly different. Thus while the average trade concentration of all single currency peggers in 1976 was 38.8%, the average trade concentration in 1976 for those nations that switched away from their single currency peg by 1982 was only 33.1%. The t-ratio in this case leads us to reject the null hypothesis at the 95% level. This result indicates that nations which by 1982 were to abandon their single currency peg, were experiencing a greater original level of diversification. It seems that they had to go through a learning process before they became willing to abandon an exchange practice that had been followed for many years. Thus, the result of hypothesis test (6) seems curious. Upon further scrutiny it turns out that between 1982 and 1985 there were nine countries that gave up their single currency peg, and all of them had been dollar peggers. Thus since it appears that countries which left their single currency peg by 1982 can be identified as ones which started with more diversification than the group as a whole, but nations deserting their pegs by 1985 cannot be so identified there must be another reason that led nations to abandon their single currency peg after 1982. Furthermore, since only dollar peggers switched between 1982 and 1985 it can be surmised that the switch away from their dollar peg was a response to the dollar’s “overvaluation.” Between 1982 and 1985 as a response to the overvalued dollar, six dollar peggers maintained the peg but devalued vis-a-vis the dollar, one appreciated vis-a-vis the dollar, nine switched from the single currency peg (as noted above), and twenty two made no change in their exchange arrangements.

CONCLUSIONS

The conclusions to be drawn from this study are straightforward. First, it is indeed the case that basket pegging nations tend to have a more diversified trading pattern than single currency pegging countries. Second, LDCs in general have experienced an increase in the diversification of their trading patterns since 1977. Furthermore, while this may well explain the shift away from single currency pegs and toward basket pegs it does not explain the shift from single currency pegs to more flexible arrangements. Third, there appears to have been a learning process nations went through before they gave up their traditional single currency pegs. We should recall that for 25 years prior to 1976, nations generally practiced single currency pegging. Thus, what distinguished those nations that left the single currency peg by 1982 was their original degree of trade diversification and not changes in their trading patterns. Lastly, there is some evidence that since the switches away from dollar pegs since 1982 have not been caused by changes in trading patterns, they may well have been a reaction to the “overvaluation” of the dollar.

FOOTNOTES

1. All the exchange-rate regime classifications are based on those reported by the IMF in their ANNUAL REPORT, Table I.1 (various issues). Over the years covered by this study the IMF classification scheme has changed. However, these changes have not had a substantial impact on this study. The reason is that they have not affected either the classification of countries as single currency or basket pegs, nor the distinction between pegging practices of either ilk, and more flexible arrangements. What has improved is the richness of the categorizations of exchange arrangements that involve more flexibility than pegs.

2. See for example Branson (1981) or Well (1983), and the Optimun Currency Area Theory literature in general.

3. For a survey of some of the most important issues in choosing an optimal exchange-rate peg see Williamson (1982) and Branson and Katseli-Papafotiou (1980).

4. The focus in this analysis is on trading patterns and not all international transactions. In that sense we are leaving out capital transactions. The reason capital flows are ignored is that in our sample of LDC’s capital account restrictions are widely employed, and they render capital flows much less important to these countries than trade oriented transactions.

5. This is the same approach employed by Branson (1981).

6. The data on nation’s trading patterns is in every case drawn from the year prior to the year describing that nation’s exchange rate arrangement.

7. See Well (1983) for a more formal and extensive analysis of the other factors that may be responsible for this change.

8. In addition, although not directly seen in these hypothesis tests, it is also true in a broad two-thirds of the cases that the country chosen by the LDCs for their peg is the one with which they do the most trade. In several instances where this is not the case it is nevertheless true that the country with which the LDC does the most trade carries out its own trade in the currency of the country to which the LDC has pegged its exchange rate. A common example of this is Japan which is the major trading partner of several LDCs, but uses the dollar in its trade.

REFERENCES


