What Next with NIFA? Evidence of Currency Divergence in South Asia

D.I.J. Samaranayake

Department of Economics and Statistics, University of Peradeniya, Sri Lanka

Keywords: *NIFA; South Asia; Cluster Analysis; Exchange rates; Currency Co-movements.*

Introduction

The global financial crisis in 2007/08 was considered as one of the worst economic crisis in the world. It paralyzed lots of economic activities in the world and generated negative results after the *Great Depression*[1] in1929/30s. The crisis played a major role in the failure of key businesses and declines in consumer wealth in trillions of U.S. dollars. Therefore, lot of intellectual as well as public discussions takes place in various countries to identify the key issues behind this crisis.

New International Financial Architecture (NIFA) becomes a one of popular topics among those discussions. According to the 'Report of the Task Force of the Executive Committee on Economic and Social Affairs of the United States' in 1999, NIFA was introduced as a framework to prevent financial crisis. Maintaining the dominance of U.S. dollar as world currency and capital account liberalization are two major aspects of NIFA. It exerts pressure on subordinate regions such as South Asia to peg their currency below the value of U.S. dollar (Wade,2008).

However, NIFA failed to defend the capitalist giant; U.S from financial crisis in 2007/08. As a result of that adverse fallouts from the crisis were damaged the economies of both developed and least developed countries in the world (Crotty,2009). Therefore, subordinate regions

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[1] The economic crisis and period of low business activity in the U.S. and other countries, roughly beginning with the stock-market crash in October, 1929, and continuing through most of the 1930s.

such as South Asia needs to think of their own way to prevent from such destructive neo-liberalize waves .Some of economists have done several studies to identify the relevance and challenges behind the currency convergence in South Asia (Khalid and Rajaguru, 2004; Chowdhury et al., 2008; Mohsin, 2011). However no specific study is done to examine the effects of NIFA on currency convergence. Therefore this study focuses on the effects of NIFA on the monetary integration of the region.

Objectives

One of the imperative needs for monetary integration in a region is *convergence in real exchange rates*[2] among its member states. This paper intends to figure out whether there is a convergence or divergence in real exchange rates in South Asian countries after the financial crisis. Moreover, it examines the price co-movements between each South Asian country with the United States.

Methodology

Graphical illustrations, Hierarchical Cluster Analysis (HCA) and simple time series method are used in this study to test the convergence or divergence trends of currencies and identify the role of NIFA within the South Asian region. The HCA is an imperative statistical method used to determine the similarity of currencies and to split them in to groups accordingly. Then the time series method use second order Auto Regression (AR) process proposed by Alesina et al. (2002) to measure currency co-movements of South Asia. Required data obtain for the time period 1986 – 2014 (*CPI data available only from 1986 onwards in the World Bank*).Therefore, co-movement of currency between countries *i* and *j* can be measured by following second-order AR;

$$ln\ P_{i,t}/P_{j,t} = \lambda_0 + \lambda_1\ ln\ P_{i,t-1}/P_{j,t-1} + \lambda_2\ ln\ P_{i,t-2}/P_{j,t-2} + \varepsilon_t \ \textbf{(1)}$$

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[2] Convergence is a coming together of two or more distinct currencies in to a common exchange rate to a given CPI for a certain time period.

where $P_{i,t}/P_{j,t}$ represent the currency level in country i (one of South Asian countries) relative to U.S. dollar noted with j in time t. Then the estimated residual ($\hat{\varepsilon}_{ij,t}^2$) from equation (2) is used to compute the root mean square error and co-movement of currencies (VP_{ij}) is calculated using the root-mean-squared error.

$$VP_{ij} = \sqrt{\frac{1}{T-3}\sum_{t=1}^{T}\hat{\varepsilon}_{ij,t}^2} \qquad\qquad (2)$$

Where T indicates the number of observations and a higher value of VP_{ij} means less co-movement of currencies between countries i and j.

Results and Discussion

This study use both hierarchical cluster analyze and time series method with more graphical analysis to examine the convergence trends of South Asian countries. It mainly tries to identify the nature of trend and the impact of NIFA for that kind of result. One of interesting finding is that the level of determinants of South Asian currencies against U.S. dollar became more and more dissimilar after the establishment of NIFA (Appendix, Figure 1). Therefore the divergence trend of South Asian currencies had increased after new neo-liberalize policies beneath the guidance of United Nations.

Moreover, the results from summery statistics (Appendix, Table 1) and HCA (Figure 3&4) has proven that the period before the financial crisis 2007/08 and the post-crisis period show completely different results about the levels of exchange rate depreciations of the South Asian countries. Indian, Sri Lankan, Nepal and Pakistan currencies have depreciated in higher values against U.S. dollar after the financial crisis.

Figure 3: Mean of lag values of real exchange rates [(1972-2007- Left Panel) & (2008-13- Right Panel)]
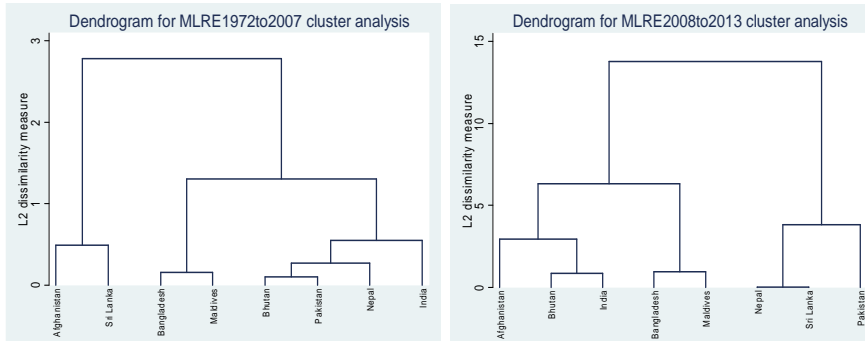
Source: Author's calculations using STATA-12 : (World Bank Data)

This has been occurred within particular period, because the United States needs to stimulate their financial operations to mitigate the adverse effects on their financial market. Therefore appreciation of U.S. dollar will make more opportunities to U.S. to increase their financial surpluses. However this would not be beneficial to South Asia. Appreciation of U.S. dollar enlarges the divergence trends in South Asia. Another interesting result of this cluster analysis proved this fact. *i.e.* South Asian countries face a dissimilarity measure lower than 3 to be clustered together against the U.S. dollar and post-crisis period increase it to 14 by widening the gaps within regional currencies.

Then the time series analysis (Appendix, Table 2) provide an interesting result within the comparison of currency co-movements of *six major South Asian countries*[3] with the U.S. dollar and Indian rupee. The results show that the co-movements of South Asian currencies are relatively high with India.

Conclusion

The results of this study question the political economy behind the currency convergence within a particular region. South Asian countries have high opportunity to use Indian rupee as their anchor currency

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[3]Exclude Afghanistan and Maldives due to the non-availability of data

rather than depending on the U.S. dollar. However, NIFA and related neo-liberalized tools narrow down opportunities for subordinate regions such as South Asia to get use of common currency against U.S. dollar. Because, it widens the gaps within individual currency values and implies a divergent trend. Therefore the role of NIFA is *not suitable* to avoid global economies from financial crisis. Further it prevents opportunities of South Asian monetary integration.

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Appendix

Figure 1: Lag of Real Exchange rates of South Asian Countries
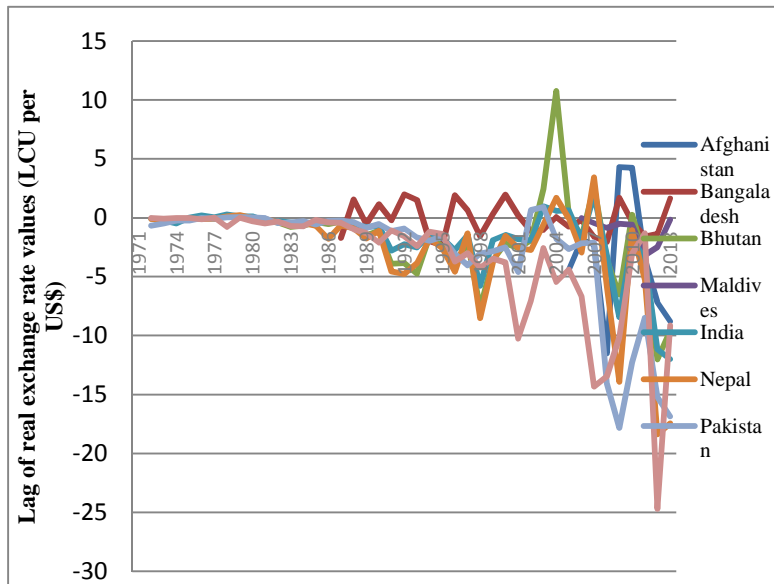
Source: Author's Calculations: (World Bank Data)

Table 1: Summery Statistics (Lag of real exchange rates)

Country	Obs:	1972-2013		Obs:	1972-2007		2008-2013 (6 obs: each)	
		Mean	Std Dev		Mean	Std Dev	Mean	Std Dev
Afghanistan	9	-3.45	5.38	3	-2.87	1.37	-3.74	6.73
Bangladesh	27	-.147	1.416	21	-.089	1.38	-.348	1.65
Bhutan	33	-2.06	3.83	27	-1.22	3.19	-5.82	4.485
India	42	-1.676	2.87	36	-.84	1.37	-6.678	4.42
Maldives	8	-1.035	1.15	2	-.24	.305	-1.3	1.23
Nepal	42	-2.66	4.496	36	-1.39	2.13	-10.32	7.21
Pakistan	42	-2.98	4.91	36	-1.12	1.315	-14.12	3.4
Sri Lanka	42	-3.51	4.99	36	-2.38	3.15	-10.31	8.39

Source: Author's Calculations using STATA-12 statistical package

Table 2: Co-movement of currency with U.S dollar and Indian rupee

Country	U.S. dollar	Indian rupee
Bangladesh	**0.1402**	0.1234
Bhutan	0.2126	0.1169
India	0.2370	-
Nepal	0.2448	**0.0248**
Pakistan	0.2429	0.0824
Sri Lanka	0.2074	0.1987

Source: Author's Calculations: (World Bank data)