THE CONVERGENCE CRITERIA AND THE SAARC COMMON CURRENCY

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Abstract

These included cross-country standard deviations of call money rates, consumer price indices, real exchange rates, growth rates of foreign exchange reserves, growth rates of real volume of trade, growth rate of real relative volume of trade and the growth rates of real per capita GDP. None of the selected variables show signs for convergence of over the whole period of 1990s through 2000s. However, for the period of 2000s most of the economic indicators show signs of convergence. This suggests emerging signs for the prospects of common currency in SAARC region. The study, however, concludes that non-economic factors must also be considered seriously before making a serious move towards monetary union in the region.

I. INTRODUCTION

A currency area may be defined as a domain in which exchange rates of national currencies remain fixed, or a currency area may have a single currency. In a currency area all the central banks will have to coordinate their policies to ensure that the buildup of the liabilities of a national central bank do not impair the convertibility of its national currency due to loss of reserves (Mundell 1961). But behind a common currency's possibility within a bloc, there must be a great degree of similarity among the parameters of economic indicators to ensure a successful union.

The first hint of such a union is dated back to 1961 when Jean *Monnet's Action Committee* for united Europe pushed for 'Reserve System' for Europe. In 1970 a committee named *Werner Committee* was set up. This committee visualized an idea for the European common currency in 1971. European Monetary system started in March

1979 and worked for resolving important issues in favor of monetary and fiscal centralization. December 1991's *Maastricht Treaty* was another step towards Euro. The key agenda set in *Maastricht Treaty* was to rectify the problems being faced by all the member countries to have uniform fiscal and monetary drifts over time. A deadline of January 1999 was also setup to define a constitution for the common central banking system. Finally, Euro was launched. It is only after the dawn of a single currency in Europe, that analysts and policy makers from South Asian countries started raising voice for the single currency. If one examines the Euro time line from 1961 to 2000, it would appear that a stable SAARC single currency is far from a reality.

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The bloc should carry out necessary work for harmonizing economic and political issues to make a successful launch of a single currency across SAARC. For this development to take place, policy makers today have to establish a stable purchasing power parity, harmonized monetary and fiscal policies across the union, and most importantly a political integration in order to ensure stable exchange rates and other key socio-economic indicators. Currently the political stability is not strong in most of the South Asian countries.

Anwar (2006) is of the view that economic backwardness in Muslim countries is widespread despite the observation that these countries are collectively very rich in terms of financial, natural, and human resources. Monetary problems in the form of financial dependency, inflation and speculation are main contributors to lasting economic backwardness in the contemporary Muslim countries. Some Muslim scholars and politicians are now recommending adoption of the gold coinage system in order to overcome these problems. Historically the gold coinage monetary system has been most stable among all the monetary systems practiced so far. A currency union of Muslim countries based on Gold Dinar (GD) may be attempted. Although, such a formation of a currency union seems infeasible under current circumstances, in future the introduction of GD in interested Muslim states is highly recommended. However, when it comes to a specific region then the proposal does not seem to be feasible because of religious, natural and cultural diversity in the region.

Regional economic blocs in the world have many objectives of forming a single currency and one of them is to meet the challenges of globalization by maintaining a stable currency at least within the bloc. For that reason, this study undertakes an assessment to authenticate the idea of the formation of a single currency in the SAARC region. World has so far witnessed the success of the currency Euro of the European Union, thus paving the way for other economic regions to assess the possibility of a monetary union within their own regional economic blocs.

The possibility of a common currency depends upon several economic factors like regional volume of trade, labor and capital mobility, interest rates movements,

exchange rate trends, etc. It is considered that if countries of a specific region have similar trends or shocks in relevant economic factors then adopting a common currency will be successful. Apparently the SAARC region has reasonably similar efficiencies of labor and capital factors, therefore a common currency for this bloc is a possibility. This study intends to determine the likelihood of a monetary union for the SAARC economic bloc.

The remaining part of the study is organized as follows. Following a review of the literature on common currency union in section II, section III provides explanation of methodology and data, section IV presents the results and in section V gives conclusions and proposes various suggestions.

II. Literature Review

The central objective behind adopting a common currency for a regional bloc is to acquire benefits from the regional trade. Rose (2000) shows that two countries that share the same currency, trade three times as much as they would with different currencies. This is possible due to a rightly directed functioning of the generalized purchasing power parity theory (GPPP Theory).

Basing their case on the relative immobility of factors of production within the European Economic Cooperation (EEC), Meade (1957) and Scitovsky (1958) observed the adoption of a common currency by the EEC as a means for promoting capital mobility within the EEC region. Present South Asia's political status defies such mobility and SAARC members need a very strong stance in order to have any improvements in regional political and economic cooperation for a harmony. Rose and Engel (2002) conclude that business cycles are strongly harmonized in a bloc with a single currency than among the countries with independent currencies.

Within the framework of the optimum currency area (OCA), Rasheed & Ansari (2004) find that it does not justify the formation of a currency union for SAARC region for the moment without involving India and Pakistan. Pakistan and Bangladesh are found to be the countries where the common stochastic trends between each other's exchange rates supports the possibility of a currency union [2].

By measuring total factor productivity and its contribution towards economic growth for South Asia and China, Srinivasan (2005) finds that the share of South Asia in global GDP has remained stagnant since the early 1990s. According to intra-regional convergence criteria this does not signal prospects for adopting a single currency in South Asian region.

A positive signal for acceding in favor of a common currency is found in the study of Alam *et al*. (2001). In this study of ten-country panel data from 1971 to 2000 Bangladesh, India, Pakistan and Sri Lanka are found to have a long run relationship between real exchange rate and real interest rate.

Considering foreign direct investment (FDI) as a factor, which defines a possible integration, Aqeel and Nishat (2004) identify the determinants of FDI growth in Pakistan. The study finds significant role of tariff rates, exchange rates and tax rates as explanatory variables for FDI. These explanatory factors also determine the success of economic integration. Lee *et al*. (2002) suggest that increased regional integration e.g., through FDI channel, could sometime strengthen the case for adopting a common currency.

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[2] India, the biggest economic bloc in SAARC region, is found to be a single currency partner with Nepal and Bhutan only.

In contrast to SAARC region of Asia, Eichengreen and Bayoumi (1996) find that East Asian region is sufficiently integrated for the formation of a currency union. Justifiably doubtful about such a union the study notes that the region lacks a history of integrationist policy, effective institutions, reliable financial systems and regional political networking, the factors that were instrumental in facilitating the establishment of a currency union in Europe. The prevailing ill feeling and lack of trust between India and Pakistan does not help the cause.

Several studies have tried to identify the determinants of synchronization of business cycles among a group of countries. Trade has been identified as an important source of co-movements of output (Rose 1998). Output movement synchronization can also be influenced by changes in relative prices of factors and products (Kraay and Ventura 2000). If trade leads to specialization, industry related shocks might reduce synchronization of output movement among the trading partners (Frankel and Rose, 1998). Thus both the volume and the composition of trade are likely to affect output synchronization. Rasheed (2000) has found extremely unsynchronized patterns of India and Pakistan's exports from 1975 to 1996 in terms of *Revealed Comparative Advantage Index*. The study also finds that from 1975 to 1994 India was able to diversify from 79 to 127 exports categorized under 3-digit SITC codes, while Pakistan's export of 3-digit SITC codes jumped from nine to 27 in the same time period.

Ahmad and Naz (2000) have used the concept of beta convergence (speed of convergence), which explains that if there is a degree of convergence then the poor countries will catch-up with the rich countries in terms of economic outcomes. Further, the study suggests that if there is a convergence occurring among the countries of a low-income group and a high-income group then it is also expected that across both the groups the variation in economic indicators will decline i.e., sigma convergence will take place.

Chowdhury (2004) analyzes the determination of the existence of sigma convergence in real per capita GDP of the SAARC countries from 1960 to 2000. The study finds that such a convergence does not prevail among the SAARC members.

In terms of an optimum currency area if co-movements among the members of a regional economic bloc are synchronized then a common currency can be formed. If a similarity in co-moments of economic indicators is achieved then it reflects that the sigma-convergence is also achieved and conclusively the economic bloc is a strong candidate for the formation of a currency union.

This paper will attempt to investigate the possibility of a common currency formation in the SAARC region using the model of sigma convergence for selected economic indicators.

III. Data and Methodology

Pitchford and Cox (1997) edited the European Monetary Union (EMU) principles for launching single currency for Europe. According to the editors the indicators like real income per capita, call money rate, consumer price index, real exchange rate, exports, imports and balance of payments are vital. In our study we have included the volume of trade both for the country specific and as a world relative index. We used the following data series to apply the beta convergence criteria to evaluate the possibility of the formation of a single currency in the SAARC region. The list of the selected variables is as follows.

    i.   Call Money Rate (CMR)
    ii.   Consumer Price Index (CPI)
    iii.   Real Exchange Rate in US dollars (RER)
    iv.   Growth rates of Foreign Exchange Reserves (GFER)
    v.   Growth rates of Real Volume of Trade (GRVT)
    vi.   Growth rate of Real Relative Volume of Trade (GRRVT)
    vii.   Growth rates of Per Capita Real GDP at factor cost (GRYPC)[3]
    where
        GRYPC = Growth rate of {GDP/(population)}.
        RER = Nominal Exchange Rate * CPI_{US} / CPI.
        GRVT = Growth rates of {(Exports + Imports)/CPI}.
        GRRVT = Growth rates of {(Exports + Imports)/CPI}/{($Exports_w$ + $Imports_w$)/
      CPI_w}, w indicating world.

All estimations are based on quarterly for the period 1991:1 to 2006:3 for six SAARC members, i.e., Bangladesh, Bhutan, India, Nepal, Pakistan and Sri Lanka. Due to non-availability of the required data, Afghanistan and Maldives are not included in the analysis [4]. It is expected, however, that inclusion of these two countries will not make a significant difference in the conclusions. All the data are taken from *International Financial Statistics* and *Direction of Trades Statistics*.

Following Chowdhury (2004), the sigma convergence model used is given as

$$\sigma_j = \alpha + \beta_j t + \varepsilon_j \qquad (1)$$

Where σ_j is the standard deviations across the member countries for the jth indicator (j = 1 to 7), α and β are the parameters of the model, t represents time period and ? is a stochastic error term. A significant negative value of β indicates the possibility of convergence, while any other value of β implies non-convergence.

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3. Since the quarterly data of GDP is not available therefore we have studied the sigma-convergence of GRYPC on the basis of yearly data from 1975 to 2005.

4. The quarterly exports and imports data of Bhutan are not available therefore the estimation of standard deviation across the SAARC for "volume of trade" does not include Bhutan.

IV. Results

Using equation (1) following are the summarized results of each of the seven economic indicators we have selected.

Table 1 shows that the negative beta coefficient is found in 2000:1 to 2006:3 which is the most recent quarterly time interval used in our study. This suggests that interest rate emerges as a factor that can play an important role towards the formation of a SAARC currency union as the movements in interest rates across the nations are highly important to be synchronized which helps to establish a monetary policy by the common central bank. The possible reason for this sigma decline is perhaps due to a global decline in the interest rates after 9/11 that stayed relatively stable thereafter.

Table 1: Regression of Cross-Country

Sigma of Call Money Rate on Time

	1991:1 1995:4	1991:1 2000:4	1991:1 2006:3	2000:1 2006:3
Coefficient	0.0403	0.0123	0.0108	-0.0917
	(2.42)	(1.24)	(1.11)	(-1.91)

Ironically all the beta coefficients for CPI are found to be negative but only in one sample it is statistically significant (see Table 2). Inflation has remained unstable due to the wars and unsteady oil prices during the last five years thus not paving the way for price stability, but synchronized movements do demonstrate a possible success of a common currency in the SAARC region.

Table 2: Regression of Cross-Country Sigma of CPI on Time

	1991:1 1995:4	1991:1 2000:4	1991:1 2006:3	2000:1 2006:3
Coefficient	-0.037407	-0.032616	-0.009724	-0.003914

(-0.84)   (-1.99)   (-1.21)   (-0.14)

For the period 2001:1 to 2006:3 beta coefficient for real exchange rate is found to be negative and statistically significant at 1% level (Table 3). This shows consistent exchange rate fluctuations among the SAARC members over the recent past. This means that RER does reflect a case of a monetary union in SAARC region.

Table 3: Regression of Cross-Country

Sigma of Real Exchange Rate on Time

	1991:1 1995:4	1991:1 2000:4	1991:1 2006:3	2000:1 2006:3
Coefficient	0.037505	0.124358	0.249089	-0.322741
	(2.87)	(3.46)	(3.68)	(-3.21)

Table 4 shows that none of the beta coefficients for the growth rate of foreign exchange reserves is negative and all the estimated coefficients are found to be statistically significant. The highest beta-divergence is found during the most recent time interval. This indicates that a relatively un-harmonized economic inclinations are preferred by and preferred for the SAARC members and therefore not helping the cause of establishing a currency union in the SAARC region.

Table 4: Regression of Cross-Country Sigma of
Growth Rate Foreign Exchange Reserves on Time

	1991:1 1995:4	1991:1 2000:4	1991:1 2006:3	2000:1 2006:3
Coefficient	0.082354	0.760451	0.935275	2.682996
	(2.76)	(1.89)	(1.65)	(3.09)

From Table 5 it is apparent that only in the recent period of 2001:1 to 2006:3 the estimated beta for the growth rate of volume of trade is negative and statistically significant. The growth in trade volume, therefore, thus seems to be synchronizing and presenting a case of a successful formation of a common currency.

Table 5: Regression of Cross-Country Sigma of

Growth Rate of Real Trade Volume on Time

	1991:1 1995:4	1991:1 2000:4	1991:1 2006:3	2000:1 2006:3
Coefficient	2.137023	1.881212	2.098028	-1.048122
	(1.32)	(1.78)	(1.93)	(-3.34)

Presenting the case of the growth rate of relative trade volume in Table 6, we find significant and negative beta values for the periods 1991:1 to 2006:3 and 2001:1 to 2006:3. This observation further strengthens the possibility of a single currency case.

Table 6: Regression of Cross-Country Sigma of Growth Rate of Real Relative Trade Volume on Time

	1991:1 1995:4	1991:1 2000:4	1991:1 2006:3	2000:1 2006:3
Coefficient	0.232352 (3.27)	0.381225 (3.46)	-0.350846 (-3.53)	-0.372488 (-2.36)

Finally, for the growth rate of per capital real GDP we have to use annual data because quarterly data were not available. Obviously the high frequency observations mean that the sub-periods need to be extended in real time domain. The results of beta convergence model are presented in Table 7. For the recent most interval i.e., 1995-2005, the beta value was found negative and significant. This result is similar to the result of 1975-1985 and 1975-1995 and thus showing a high likelihood of forming a successful single currency.

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Table 7: Regression of Cross-Country Sigma of Growth Rate of Per Capita Real GDP on Time

	1975-85	1975-90	1975-95	1975-00	1975-05	1990-05	1995-05
Coefficient	0.471245	-0.658741	-0.061248	1.025484	0.654711	0.425144	-0.784512
	(1.98)	(-1.96)	(-2.25)	(1.83)	(1.38)	(4.65)	-(3.43)
R^2	0.48	0.66	0.75	0.74	0.84	0.91	0.88

V. Summary and conclusions

This study explores prospects of forming a common currency area in the SAARC region by applying sigma-convergence criteria on seven economic indicators selected on the basis of EMU standards for forming a currency union. We applied sigma convergence criterion using cross-country standard deviations of call money rates, consumer price indices, real exchange rates, growth rates of foreign exchange reserves, growth rates of real volume of trade, growth rate of real relative volume of trade and growth rate of real

per capita GDP to evaluate the possibility of a single currency in the SAARC region. For the most recent time period i.e., 2000:1 to 2006:3 we find interest rate, real exchange rate, growth rate of trade volume, growth rate of relative trade volume and growth rate of real per capita GDP show promising trends and some degree of synchronization is observed in the SAARC bloc, which is helpful for forming a currency union in SAARC.

South Asian countries have initiated cooperation within the framework of SAARC by controlling poverty, bilateral investment plans, and technological support through free trade agreements like SAFTA, which was signed by the SAARC member countries at the Islamabad SAARC Summit, 2004. The SAARC social charter includes policy preference in areas of poverty eradication, public mobilization, human resources development, health issues etc.

In spite of this, it is suggested that the SAARC should not follow the common currency fad in haste as apart from the economic indicators there are several other indicators like political will that also need to be considered and considered. Historically common currencies have generally followed political unification. The advent of the Euro has preceded full political unity, while being two imperative countries in the SAARC the political divergence is not reversing between Pakistan and India and it is a fantasy to think that the political conflict and rivalry between Pakistan and India can be effectively bridged through a plan of monetary unification. Nevertheless, the study emphasizes that the concerned agencies cannot find refuge under the plea of economic divergence among the members countries to avoid the serious task of bringing non-economic factors in focus for any meaningful process of dialogue meant for evolving economic integration in SAARC.

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