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THE IMPACT OF CURRENCY DEPRECIATION ON EXPORTS OF SAARC COUNTRIES

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ABSTRACT

Conventionally, it is believed that decline in value of currency tends to improve exports due to relatively cheaper items making imports expensive specifically for developing economies. Hence, the aim of the study is to investigate the impact of currency depreciation on exports of SAARC countries from 1981 to 2017 using panel ARDL and ECM techniques. Correspondingly, four SAARC countries- Bangladesh, India, Pakistan, and Sri Lanka have been selected employing the data of real effective exchange rate, exports, inflation, and gross capital formation. The panel ARDL model has approved an inverse association of currency depreciation with exports in the long run and significant implication of ECM in the short run. The estimated findings have pointed towards the prevailing circumstances at both regional and country level. An inelastic nature of exportable products; lack of market diversification, confinement of domestic demand in international markets; and limited regional integration among SAARC economies are the prominent attributes of deteriorating exports. Precisely, these elements restrict the economies to bear the fruits of currency depreciation. It is concluded that SAARC economies have the potential to enhance their exports as these virtually exhibit same production patterns; and divergent comparative advantages. It is thus essential for the countries to cope up with inter and intra-regional risks and issues immediately in order to grab wider global economic prospects through enhancing exports competitiveness.

Contribution/ Originality: The study contributes in the literature while providing the implication of currency depreciation on exports of selected economies of SAARC region. The estimated value of real effective exchange rate has been found to exert indirect pressure on exports which proves that depreciation reduces the export growth in South Asian region.

1. INTRODUCTION

In today's globalized era, the impact of exchange rate on exports has grabbed the attention of economists, and policymakers. This nexus is considered significant in sundry of emerging and developing economies as exports in these economies are considered central for growth and development (Alege and Osabuohien, 2015).This could be attributed to an increase in emphasis on export-led growth with minimum trade restrictions and rapid liberalization in economies. Thus, a well mix of these strategies would assess to bear the advantages of exchange rate swings with more capital formation (Koirala, 2018). On the other side, it is also a well-established outlook that an increase in

exchange rate fluctuations would destabilize the growth of the economy and precisely for exports and imports due to price differences. Therefore, the scenario is not ideal for the economies that have underdeveloped financial and capital markets (Kose *et al*., 2010).

The concept of currency depreciation and its impact on exports has been widely discussed in the context that most of the developing and emerging economies of Asia, Africa and South America had gone through trade imbalances over the years. Consequently, this trend motivates these economies to opt for currency depreciation with annexation of the Real Effective Exchange Rate (REER) reform. This reform had been introduced to stabilize the deteriorating trade parameters and with an initiative to improve the trade performance (Raza *et al*., 2013). However, the theoretical and empirically evidences from various studies exhibit an ambiguity on exchange rate role for exports (Fang and Miller, 2007). This ambiguity arises due to various factors including implications of different exchange rate regimes (Liu *et al*., 2017). However, here we are interested in exploring the customary association between currency depreciation and exports specifically in the context of South Asia.

1.1. Currency Depreciation and Exports: A Recent South Asian Context

In order to develop a regional insight, we have extracted some recent figures from the *South Asian Economic Focus Spring Report (2019)*. According to the report, the South Asian region was the fastest growing region with 7.2 percent growth in 2017 and 6.9 percent in 2013. Yet the region requires to enhance its exports in order to endure the extraordinary progress attaining its complete economic potential. Further, with roust growth prospects, the anticipated growth of the region were expected to enhance up to 7 percent in 2019. The region exhibited 7.1 percent of growth over the last two years showing an improvement in the progress of the region. Additionally, there was also enhancement in domestic demand between 2015 and 2018 with 8.4 percent per year while the exports of South Asia propagated only by an average of 3.2 percent. Consequently, the imports of the region grew faster than exports in order to fill the demand and supply gaps. Meanwhile, the gap between exports and imports had been reversed in the third and fourth quarter of 2018. Consequently, these inconsistencies in trade triggered depreciation, capital outflows; surge in swap spreads in compliance with deteriorating stock values. **T**he assertive role of depreciation for exports had been questioned in the region.

On the whole, it is concluded that the growth of South Asia highly relies on the domestic demand which in turn amplifies imports outdoing improved rate of exports. This in turn expected to widen trade gaps (Hanif, 2018) and current account deficits (Sahoo and Dash, 2016) eliciting currency depreciation in South Asian economies. In this respect, South Asian countries are required to strive more to integrate into global markets (Mahmood and Ahmed, 2017) in order maintain its ascending progress trajectory. It is also propagated that this would not also create more employment in these economies (Brooks and Go, 2012) yet also up lift the well-being of people (Artuc *et al*., 2019).

The effectiveness of exchange rate for exports is a subject of intense debate specifically in developing and emerging economies of South Asia. This could be the reason several studies have been done to empirically test the theoretical inferences of the exchange rate and this paper embodies an additional input in this deliberation. The study personifies the implication of currency depreciation on exports of selected economies from South Asian Association for Regional Cooperation (SAARC). It employs a panel data investigation of 4 economies (Bangladesh, India, Pakistan, and Sri Lanka) with rational share in regional exports for the time span of 1981-2017. Precisely, the fundamental spat is to probe the node of exports and exchange specifically depreciation in consonance with other relevant macroeconomic variables to deliver the desired export function for trade promotion.

The rest of the study undertakes a section with brief appraisal of allied literature while the third segment explains methodology. The subsequent section presents the empirical estimates with brief economic interpretations while conclusion and recommended policies are elaborated at the completion the paper.

2. LITERATURE REVIEW

This segment analyzes a few distinguished yet related studies to figure out the direction of literature and to associate it with this study. Considering the studies of fixed exchange rate regime, Thuy and Thuy (2019) investigated exchange rate vacillations and exports of the emerging economy of Vietnam. The authors employed the quarterly data from 2000Q1 to 2014Q4 and applied the Auto Regressive Distributed Lag (ARDL) bound testing method. Furthermore, the demand function of exports had been estimated through considering foreign remuneration and depreciation. The results of the study revealed that currency depreciation indirectly affected the exports of Vietnam in short run; however the relationship had been reversed in the long run. The authors argued that findings of the study recommended adopting policy measures for managing exchange rate system to enhance the exports of Vietnam. In a related study, Kurtovic *et al.* (2017) intended to reconnoiter REER and trade of Albania. The author collected the quarterly data for the period of 1994-2014 and employed ARDL bound testing co-integration; Vector Error Correction Model (VECM); and Impulse Response Function for the estimation purposes. The empirical findings showed co-integration between the trade balance and REER depreciation. Precisely, REER depreciation directly affected the trade balance (long spans and short spans) showing the weak incidence between exports and currency depreciation. This outcome was in line the panel study of Bahmani-Oskooee and Kara (2003). The authors also determined a direct impact of currency depreciation on exports of industrial countries through the error corrections of demand functions separating imports and exports. However, the authors concluded that the outcomes of exchange rates vary from country to country and thus specific outcomes could not be provided.

Malik *et al.* (2016) recapitulated the recent theory of international trade to relate the exchange rate with exports of Pakistan employing annual series. The study applied Simultaneous Structural Model (SSM) for the period 1980-2010 including imports and foreign direct investment (FDI). The empirical findings indicated the significant and direct link between the currency depreciation and exports. The results implied that exchange rates were effective to improve exports. The study stressed to focus on export-promotion policies through currency depreciation that would ultimately enhance the exports profit. In a supplementary study for Pakistan, Atif *et al.* (2017) contemplated same results and declared currency depreciation as a stimulating element for agricultural exports in Pakistan.

Alege and Osabuohien (2015) explored the nexus between trade and exchange rate in sub-Sahara African economies in the context of partial equilibrium analysis for the time period of 1980-2008. The authors developed separate models for both exports and imports in consonance with same independent variables- exchange rate, stock of capital, real GDP and technology. The findings of the panel co-integration revealed that imports and exports of the economies in Africa were inelastic to exchange rate modifications. Nevertheless, exchange rate management would remain a critical element to ensure its part in facilitating trade in sub-Sahara region. These findings were in consistent with the study of Hooy *et al.* (2015).

Mukhtar and Malik (2010) selected South Asian economies (India, Pakistan and Sri Lanka) in order to ascertain the strength of exchange rate- exports. The study fused separate models of the long span method (co-integration) with the short span model of Vector Error Correction Model (VECM). The authors made a panel for the time period of 1960-2007. The results of the forecasting model indicated the presence of a distinctive co-integration association between export prices (relative), exports (real), economic movements (foreign) volatilities in value of currency. Despite the momentous negative impressions for exports, real exchange rate depreciation would improve terms of trade. The study suggested boosting up exports through a real and stable value of currency.

Fang and Miller (2007) revisited the feeble association of currency depreciation with exports for the economy of Singapore. The authors employed a Generalized Autoregressive Conditional Heteroskedasticity in-Mean (GARCH-M) bivariate model to simultaneously incorporate the trend risks. The empirical evidence of the forecasting model predicted that currency depreciation would have no significant impact to improve the exports. On

the whole, the study recommended the think tanks in Singapore to stabilize the exchange rate rather than promoting currency depreciation specifically to enhance the export-led growth. Ndlela and Ndlela (2002) found associated findings taking 8 economies of South Africa.

Turning to the studies of pegged exchange rate arrangements, Vo and Zhang (2019) examined 10 subsectors of manufacturing sector during the time span of 2000–2015. The authors considered the supplementary potential elements of exports such as financial crisis, participation in World Trade Organization (WTO) and exporting country's geographic structure. The findings of the study confirmed that devaluation of currency in Vietnam had appeared to improve exports in short spans; however, spontaneity in value of currency showed adverse outcomes in longer spans.

Oluyemi and Isaac (2017) examined the monthly data of exchange rate and trade for the period of 1996-201 using tri-variate Vector Auto-regression (VAR) model. The empirical results of the model elaborated insignificant outcomes of currency depreciation on exports and imports in Nigeria. However, the estimates of impulse response function found to be significant that exchange rates responded positively to imports and negatively to exports. The authors suggested introducing cautious plans to target the diversifying foreign income flows and hence devalued currency measure has been prescribed as a remedy. However, Genemo (2017) found inconsistent results and concluded that currency depreciation would worsen the trade in African countries.

On the contrary side, Raza *et al.* (2013) performed a comprehensive analysis aimed to study the depreciation outcome on the trade stabilities of South Asian economies considering the Marshal-Lerner Model (MLM) and J-curve. The authors used textual exploration of the available data to make forecasts for South Asian countries. The study estimated various regression models and concluded that results vary substantially from country to country demanding a comprehensive investigation. Predominantly, the study supported and confirmed MLM which showed that devaluation of currency in South Asian economies was not supposed to improve balance of trade.

In a comparative study, Qureshi and Tsangarides (2015) investigated both currency systems and trade for the time period of 1972-2006 considering 159 economies. The study applied the Augmented Gravity model and established that fixed regime was more prominent then floating regime in promoting mutual trade in selected economies. Additionally, Sekkat and Varoudakis (2002) established an insight that value of currency and trade measures were indispensable for exports up-gradation in manufacturing sector in North Africa. The authors found these estimates through fixed-effects estimates.

Considering the traditional perspective on nexus between currency depreciation and exports, Wilson and Takacs (1979) and Junz and Rhomberg (1973) supported the beneficial outcomes through currency deterioration (fixed regime) to facilitate exports for advanced countries. The outcomes of these were not consistent with the findings of Wilson and Tat (2001); Abeysinghe and Yeok (1998); Athukorala and Menon (1994) and Athukorala (1991).

A comprehensive evaluation of hypothetical and empirical studies has outlined the fact that the currency depreciation-exports nexus is multi-faceted. In this regard, it is evident that there is no clarity regarding the positive or negative and even significant connotations between currency depreciation and exports of an economy. There is also a contradiction between traditional economic arguments suggesting perfect markets with the empirical evidences showing exchange-rate misalignments on trade flows and specifically on exports. The association between currency depreciation and exports is yet a wide policy debate in recent times.

3. METHODOLOGY

3.1. Data Source

This study implies panel dataset for the period of 1981 to 2017of four selected countries (Pakistan, India, Sri Lanka, and Bangladesh). The dataset has been obtained from *World Development Indicators (WDI)* and *International*

Financial Statistics (IFS). Table 1 provides a quick glimpse of abbreviations, unit of measurement and referred studies of the selected variables of the model.

Table-1. Description of variables.

Variables		Abbreviation	Reference studies
Export (current us $)	Dependent	Log(EX)	Kamal (2015); Majeed *et al.* (2006); Uysal and Mohamoud (2018)
Real Effective Exchange Rate		Log(REER)	Rena *et al.* (2011); Thuy and Thuy (2019); AbuDalu *et al.* (2014)
Inflation (2010)	Independent	Log(CPI)	AbuDalu *et al.* (2014); Gylfason (1997); Muktadir-Al-Mukit and Shafiullah (2014)
Gross capital formation (Current Us $).		Log(GCF)	Rajni (2013)

3.2. Research Estimation Technique

While considering panel data framework, this research has been performed due to several advantages which improve efficiency of estimated outcomes. Using diverse knowledge and increase comprehensiveness of the analysis panel data incorporates effects of time series data along with cross section (Baltagi, 2013). Due to availability of data, panel data is estimated with large time period (T) and large cross section (N). However; the differences are applied with assumptions of with large or small time span with large number of cross section. Other panel different techniques are available through which panel data set can be estimated with certain restrictions and requirements. For instance; models of Fixed Effect (FE), Random Effect (RE); and Generalized Method of Moment (GMM) are appropriate for small time span. Moreover; the main outcomes have been drawn from large time span which divulges that homogenous slope coefficients (asymptotic) are often not suitable (Pesaran and Smith, 1995; Pesaran *et al.*, 1997;1999). It should be notified that dynamic GMM estimator is applicable only in case of N>T. The FE model pools time series data for each cross section while allowing fluctuation in intercept across cross section. However; if estimated coefficients are not same then fixed effect model generate false and misleading outcomes. It is pertinent to mention here that as for our case, 4 economies are less than the 36 years (N<T). The Dynamic Mean Group (DMG) projected by Pesaran *et al.* (1999) is a suitable panel option as this considers a lower degree of heterogeneity (Fazli and Abbasi, 2018).

Equation 1 illustrates model with homogenous slope coefficient while Equation 2 demonstrates panel model with heterogeneous slope coefficient.

$$Y_{it} = \alpha_{1_0} + \beta_1 X_{1_{it}} + \beta_2 X_{2_{it}} + \beta_3 X_{3_{it}} + \varepsilon_{it} \quad (1)$$

$$Y_{it} = \alpha_{2_0} + \beta_{1i} X_{1_{it}} + \beta_{2i} X_{2_{it}} + \beta_{3i} X_{3_{it}} + v_{it} \quad (2)$$

Where;

$i = \text{cross section}$

$t = \text{time span}$

$Y = \textit{dependent variable}$

$X = \textit{independent variable}$

If Equation 1 is accepted then panel model is estimated through conventional panel models (FE, RE, or GMM) whereas; if Equation 2 is accepted then panel model can be estimated through PMG or DMG. However; model

estimation with heterogeneous slope coefficient are considered better in empirical research because it is more consistent authentic with economic realities (Coakley *et al.*, 2006; Eberhardt and Teal, 2011; Fazli and Abbasi, 2018).

The model follows two rules of mean group estimation. First; it estimates a particular estimation model for every group which exists in the panel model. Second; it takes average of coefficient of each group in order to obtain coefficients of the panel. In this respect; the group heterogeneity is deliberated in the model and coefficients would also be comparable to the original parameters of the economies.

Equation 3 present the DMG estimators with panel ARDL$(p, q_1, q_2 q_3 \ldots., q_n)$.

$$y_{it} = \sum_{j=1}^{p} \lambda_{ij}\, y_{i,t-j} + \sum_{j=o}^{q} \delta_{ij}\, x_{i,t-j} + \mu_i + \varepsilon_{it,} \tag{3}$$

Here;

$y_{it} = dependent\ variable\ for\ group\ I$

$x_{ij} = Vector\ of\ explanatory\ varaibles\ of\ group\ I$

$\delta_{ij} = Vector\ of\ coefficients$

$i = 1,2,3, \ldots., N\ (Groups)$

$t = 1,2,3, \ldots\ldots., T\ (Time)$

$\mu_i = Fixed\ effect$

$\varepsilon_{it} = Vector\ of\ error\ terms$

It is more appropriate to estimate model with re-parameterization of Equation 3. It is structured co-integration DMG obtaining both long-run and short-run estimates. The choice between DMG models i.e Average Mean Group (AMG) or Pooled Mean Group (PMG) has been done by Hausman test.

The PMG estimation assumes that error terms are independent yet not serially correlated with explanatory variables (exogenous). The second imperative assumption of PGM is the presences of long-term association between variables (endogenous and exogenous). The third assumption of PGM is that parameters of long run are same across different cross section however it may not be same in short-run. The PGM estimator is also flexible which permits homogeneity in long-run coefficient over each subgroup of countries or variables. Therefore, through this producer of estimation, the conventional problems of estimation can be resolved.

$$\Delta y_{it} = \left(\varphi_i y_{i,t-1} \beta_i' x_{it}\right) + \sum_{j=1}^{p-1} \lambda_{ij}^{*}\, \Delta y_{i,t-j} + \sum_{j=0}^{q-1} \delta_{ij}^{*'}\, \Delta x_{i,t-j} + \mu_i + \varepsilon_{it,} \tag{4}$$

$$Where, \Delta y_{it} = y_{it} - y_{i,t,} \varphi_i = -\left(1 - \sum_{j=1}^{p} \lambda_{ij}\right), \quad \beta_i = \sum_{j=o}^{q} \delta_{ij,}\, \lambda_{ij}^{*}$$

$$= -\sum_{m=j+1}^{p} \lambda_{im}\ and \delta_{ij}^{*} = -\sum_{m=j+1}^{q} \delta_{im.}$$

Equation 4 shows general model of ARDL-PMG where; φ is speed of adjustment parameters which is expected to be negative. As mentioned above that PGM estimator assumes homogeneity in the coefficient of long-run estimates which must be same across countries and group whereas; coefficients of short run estimates are allowed vary across group or countries.

The error correction from of PMG is estimated as follow:

$$\Delta y_{it} = \phi_i\left(y_{i,t-1} - \vartheta_i' X_{it}\right) + \sum_{j=1}^{p-1} \lambda_{ij}^{*} \Delta y_{i,t-1} + \sum_{j=o}^{q-1} \delta_{ij}'^{*} \Delta X_{i,t-j} + \mu_i + \epsilon_{it} \quad (5)$$

Equation 5 shows error correction from of PMG where; parameter ϕ_i is the error term which shows speed of adjustment. If $\phi_i = 0$ no long run relationship would be proved. This error term should be negative and significant due to prior assumption which shows that variables will be converged towards equilibrium in long-run whereas; the vector θ_i contain the long-run association among variables.

4. FINDINGS OF PANEL ESTIMATES

Table-2. Statistical descriptive.

Statistics	LnEX	LnREER	LnCPI	LnGCF
Mean	2.693630	4.700822	1.980014	3.087655
Median	2.743308	4.692815	2.026507	3.152912
Maximum	3.663964	5.418098	3.116378	3.578308
Minimum	1.222673	4.335852	0.392839	2.527378
Std. Dev.	0.549534	0.210514	0.498091	0.250153
Skewness	-0.355157	0.859147	-0.467561	-0.238993
Kurtosis	2.530142	3.929548	3.262400	2.082057
Jarque-Bera	4.442544	23.37665	5.777752	6.560427
Probability	0.108471	0.000008	0.055639	0.037620
Sum	395.9636	691.0208	291.0621	453.8853
Sum Sq. Dev.	44.09027	6.470168	36.22188	9.136185
Observations	147	147	147	147

Table 2 describes summary statistics of the selected variables. There is significant fluctuation in the maximum and minimum values of exports with the range of minimum value of 1.22 while 3.66 for maximum. Similarly; the range of variation for real effective exchange rate is minimum 4.33 and maximum 5.41. Inflation rate and gross capital formation have also recorded variations ranging from 0.39 to 3.11 for inflation rate whereas; from 2.53 to 3.57 for gross capital formation.

Table-3. Correlation matrix.

Variables	lnEX	lnREER	lnGCF	lnCPI
lnEX	1	0.0727	0.4603	0.16068
lnREER	-0.0727	1	0.16991	0.02943
lnGCF	0.46039	0.1699	1	0.02873
lnCPI	0.1606	0.02943	0.02873	1

The above table shows various correlation matrixes that proves linear relationship and strength of among variables. We have found weak but positive linear association among variables with respect to GDPG. The results of panel unit root tests have been presented in Table 3. First, we have employed the panel unit root test of Im *et al.*

(2003) which was hereafter termed as IPS test. The test has been extensively used in pragmatic studies as it offers simple technique and allows heterogeneity. The IPS test basically assumes independence among cross sections of the panel data without considering time effects (common). The test incorporates the heterogeneity through distinct deterministic properties (both constant and non-constant) with serial correlation (heterogeneous) arrangement of the error terms (Afonso and Rault, 2008). Additionally, we have also provided the results of three other panel unit root tests for expedite comparisons. These include (Levin *et al.*, 2002) Augmented Dickey Fuller and Peseran tests that are hereafter referred as LLC, ADF and PP test respectively.

Table-4. Panel unit root tests.

LLC test (Trend and intercepts)					**IPS test (Trend and intercepts)**				
I(O)			I(1)		I(O)			I(1)	
	t-Stat.	**Prob.**	**t-Stat.**	**Prob.**		**t-Stat.**	**Prob.**	**t-Stat**	**Prob.**
LnEX	2.215	0.9866	-1.34336	0.0896	LnEX	2.7176	0.9967	-3.91299	0.0000
LnREER	2.215	0.9866	-1.34336	0.0896	LnREER	2.7176	0.9967	-3.91299	0.0000
LnCPI	-0.9226	0.1781	-8.30378	0.0000	LnCPI	-1.53475	0.0624	-7.84929	0.0000
LnGCF	-1.94787	0.0257	-2.43273	0.0075	LnGCF	-1.61105	0.0536	-4014892	0.0000
ADF Test (Trend and intercepts)					PP Test (Trend and intercepts)				
I(O)			**I(1)**		**I(O)**			**I(1)**	
	t-stat.	**Prob.**	**t-Stat.**	**Prob.**		**T-Stat**	**Probe-values**	**t-Stat.**	**Prob.**
LnEX	0.72202	0.9995	29.6543	0.0002	LnEX	2.56268	0.9586	111.729	0.0000
LnREER	0.72202	0.9995	29.6543	0.0002	LnREER	2.56268	0.9586	111.729	0.0000
LnCPI	15.5083	0.0500	63.6387	0.0000	LnCPI	25.5176	0.0013	574.264	0.0000
LnGCF	17.4933	0.0254	32.0414	0.0001	LnGCF	5.18988	0.7376	58.9099	0.0000

Table 4 represents outcomes of various unit root tests. It can be verified that the variables of the panel dataset are integrated at level and first difference both. This allows to employ the panel ARDL methodology. The outcomes of panel unit roots also exclude the possibility of integration of variables at second difference and none of under lying variable is of order I(2). Now; for long-term integration between under lying variables is examined by Kao Residual Co-integration Test (Kao, 1999; Fazli and Abbasi, 2018).

Table-5. Results of cointegration test.

H_0: No Co – integration	**t-Statistic**	**Prob.**
	-1.415169	0.0785

The Table 5 shows result of Kao test. It is clear from the estimates in the table that the null hypothesis is rejected at 1 percent which endorses long-term affiliation between variables. Thus, co-integration among variables is sufficient avoiding likelihood of false regression. The acceptance of alternative hypothesis in Table 6 also allows to employ the PMG-ARDL technique

Table-6. Results of hausman test.

Test Summary	**Chi-Sq. Statistic**	**Chi-Sq. d.f.**	**Prob.**
Cross-section random	383.008116	3	0.0000

Thus, result of Hausman test allows to estimate the dynamics of the main model (Fazli and Abbasi, 2018). Figure 1 shows maximum selected lags of estimated model.

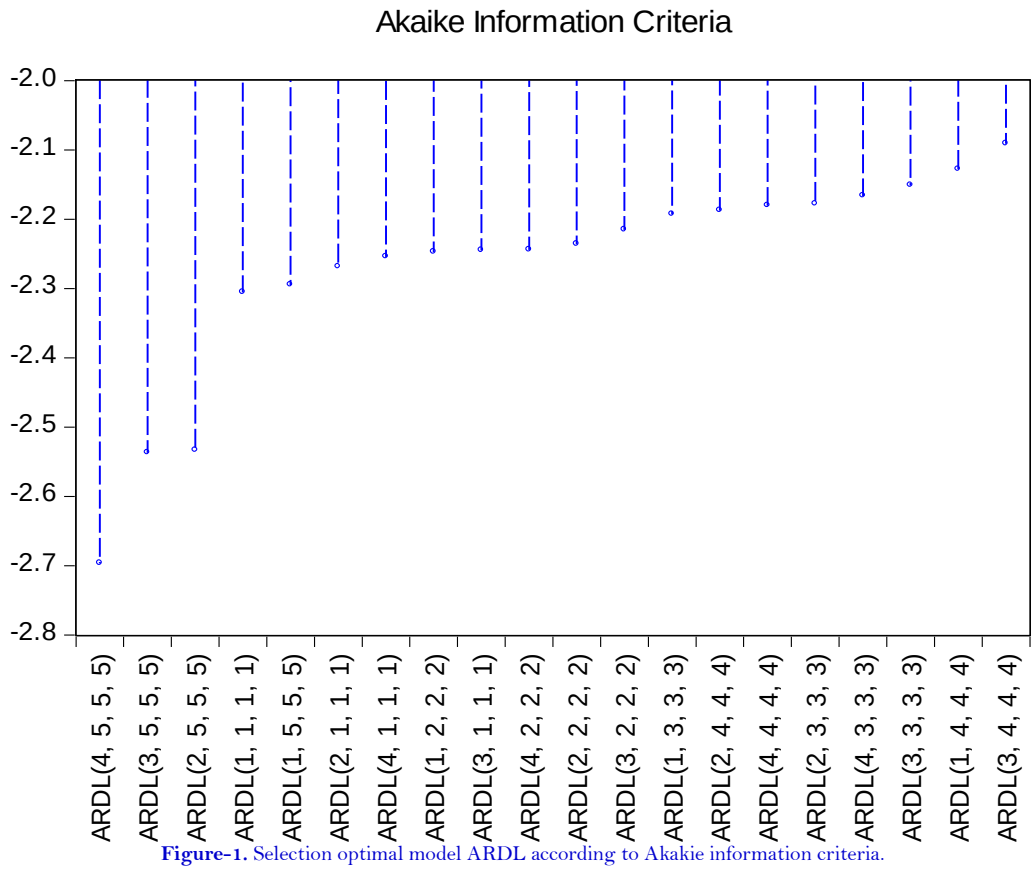

Figure-1. Selection optimal model ARDL according to Akakie information criteria.

While selecting appropriate maximum lag lengths with automatic selection under *Akaike Information Criteria (AIC)*, we have estimated ARDL Model for long and short run estimates.

Table-7. Long run estimates of panel model.

Dependent variable: D(LnEX)
Estimated model: f(Ln(REER), Ln(CPI), Ln(GCF))
Model selection method: Akaike info criterion (AIC)
Selected Lag Length: (4,5,5,5)

Variables	Coefficient	Std. Error	t-Statistic	Prob.
LnREER	-1.851143	0.089118	-20.77193	0.0000
LnGCF	1.332338	0.215632	6.178763	0.0000
LnCPI	-0.117227	0.023127	-5.068928	0.0000

Table 7 represents long-run coefficients of the panel model. In this study; we have found negative and significant association between real effective exchange rate and exports. After controlling other observable factors one percent increase in real effective exchange rate will decrease exports by -1.85 percent. The estimated value of real effective exchange rate has been found to exert indirect pressure on exports which proves that depreciation reduces the export growth in South Asian region. The finding is in line with the studies of Edwards (1986); Kalyoncu *et al.* (2008); Rodrik and Subramanian (2009); Haddad and Pancaro (2010); Hooy and Choong (2010). Eilat and Einav (2004) contended that exchange rate volatility does not matter more for exports and economic growth in developing countries where political jeopardy was more imperative than international competencies. In the contract, an appreciation of currency value may adversely effects the competitiveness of South Asian countries in the global markets. Due to currency depreciation, domestic demand will compress and other regulatory measures may fail to restrict imports. The inelastic nature of exports is also another main reason of that increasing value of currency has not significant impact on exports for South Asian countries. Positive and significant association has been proved in this study which proves that one percent increase in gross capital formation resulted in 1.33 percent

increase in exports. Capital formation is considered as capital stock and used as a proxy of domestic investment. Production can be enhanced through capital formation which further increases production of export goods. The study also proves negative but significant impact of inflation on exports in long run, one percent increase in inflation contributes -0.11 percent decline in exports (Gylfason, 1997). Higher inflation increases cost of production which leads to decline in production of goods (Ahmed *et al*., 2013). An increase in prices also create volatility in term of trade that also discourages exports of primary goods (Ijaz *et al*., 2014).

Table-8. Short-run estimates of panel model.

Dependent Variable: D(EX) Estimated Model: f(Ln(REER), Ln(GCF), Ln(CPI)) Model Selection Method: Akaike info criterion (AIC) Selected Model: ARDL(4, 5, 5, 5)				
ECM(-1)	-0.646646	0.206830	-3.126453	0.0027
D(EX(-1))	0.305578	0.252252	1.211401	0.2305
D(EX(-2))	0.172616	0.104940	1.644904	0.1052
D(EX(-3))	0.129936	0.157240	0.826353	0.4119
D(REER)	0.815725	0.663880	1.228723	0.2240
D(REER(-1))	0.677878	0.343570	1.973039	0.0531
D(REER(-2))	0.555349	0.431341	1.287494	0.2029
D(REER(-3))	0.305129	0.294858	1.034834	0.3049
D(REER(-4))	0.499841	0.373299	1.338984	0.1856
D(GCF)	0.001936	0.644870	0.003002	0.9976
D(GCF(-1))	-0.469140	0.323836	-1.448697	0.1526
D(GCF(-2))	-0.514742	0.340673	-1.510959	0.1360
D(GCF(-3))	-0.462757	0.266675	-1.735287	0.0878
D(GCF(-4))	-0.104928	0.372189	-0.281920	0.7790
D(CPI)	0.053024	0.025098	2.112715	0.0388
D(CPI(-1))	0.057417	0.027713	2.071827	0.0426
D(CPI(-2))	0.022673	0.034030	0.666266	0.5078
D(CPI(-3))	0.005410	0.021465	0.252054	0.8019
D(CPI(-4))	0.036733	0.026587	1.381632	0.1722
C	4.732859	1.447896	3.268784	0.0018
@TREND	0.005941	0.006552	0.906659	0.3682
Mean dependent var.	0.015727	S.D. dependent var.		0.085235
S.E. of regression	0.052509	Akaike info criterion		-2.329542
Sum squared resid.	0.165435	Schwarz criterion		-0.559694
Log likelihood	258.2213	Hannan-Quinn criterion		-1.610434
Cross Section Short Run Equation				
Countries	Coefficient	Std. Error	t-Statistic	Prob.*
Bangladesh	-0.974306	0.045570	-21.38019	0.0002
India	-0.220782	0.003383	-65.27176	0.0000
Pakistan	-0.364233	0.002732	-13.3254	0.0000
Sri-Lanka	-1.027262	0.015728	-65.31558	0.0000

Table 8 elucidates the results of PGM short run estimates of both panel data. Considering the panel estimates of short run, the value of ECM is -0.646646 (0.0027) which is validating convergence of the model towards long run equilibrium after occurrence of any shocks in the short. Meanwhile, cross-section estimates of short run also indicate movement towards equilibrium as ECM term's signs are negative and statistically significant for Bangladesh, India, Pakistan and Sri Lanka with coefficients values -0.97, 0.22, 0.36 and -1.02 respectively.

5. CONCLUSION

The study had accompanied the existing literature through incorporating the dynamics between currency depreciation and exports of South Asian economies. The study has investigated the nexus between currency depreciation and exports using the panel data for the period of 1981-2017. The dynamics of the core variables has

been incorporated through panel ARDL model. The estimates of the model confirmed an indirect and significant impact of currency depreciation on exports of the selected economies in long run. This implies that an increase in real effective exchange rate exchange rate or currency depreciation will reduce the exports of the South Asian economies. The other control variables are also significant to explain the exports of the economies. Additionally, the shorn run estimates of the ECM model affirmed that the model will converge to its equilibrium in long term. The short run convergence through ECM estimates has been validated in all four economies. Thus, the model estimates have provided an evidence of the dynamics between the variables of the study. On the whole, the currency depreciation in the developing economies of South Asia has not been found effective in improving the exports and trade of these economies. Given the discussion in the preceding section, we have proposed a few doable policy measures in the lieu of two main insights, notably considering the long term perspective and to rectify the distortions in case of disequilibrium in the short run.

- The uncertainty of exchange rate in developing economies of South Asia must be reduced through adopting the currency weightage criteria. This will assess to stabilize the nominal exchange rates with the stable currencies that are widely used for international transactions.
- There is also a dire need to synchronize the exports of the economies with the international standards. Despite the immense focus on exports, South Asian products still lagged behind due to high production cost, low quality, and branding; and technological backwardness. These are considered as the vital factors to deteriorate the competitiveness in foreign competitive marketplaces.
- An improvement in foreign financial markets is highly required as inauguration of new currency derivatives (foreign) would reduce the probable risks in the international businesses.
- The domestic enterprises in developing economies require a suitable trade strategy comprising a long run prophecy in order to eradicate risks through hedging and contracts (options, future, swaps).
- The economies must pair up the devaluation of currency with the long-term policy initiatives of branding and identifying the comparative advantage with better market access.

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