# THE EFFECT OF EXCHANGE RATES ON EXPORTS AND IMPORTS OF EMERGING COUNTRIES

***Elif Guneren Genc***
Asst. Prof. Dr., Istanbul Commerce University,
Faculty of Commercial Sciences
***Oksan Kibritci Artar***
Asst. Prof. Dr., Istanbul Commerce University, Faculty of Applied Sciences

**Abstract**

The debate regarding the desirable degree of foreign exchange rate policies hasbeen persisting for decades. Markets are able to effectively achieve optimum efficacy and maximize welfare output when operated without distortions. This research was guided by two key objectives;to determine the impact of exchange rates on imports and to investigate the impact of exchange rates on exports of economically developing countries. This paper focusses on establishing whether there is a co-integrated relationship between effective exchange rates of selected emerging countries. Many studies have indicated that policies touching on exchange rates closely affect the international trade of a country. This study applies the panel co-integration method for the period of 1985-2012. The annual data used in the empirical analysis were obtained from the World Bank data base. As a result, there is co- integrated relationshipbetween effective exchange rates and exports-imports of emerging countriesin the long run.

**Keywords**: Exchange rate, import, export, panel co-integration

## Introduction

Developments of world economies position financial systems as leaders in the world exchange market.In open economies, foreign exchange rate policies are among the most important macroeconomic indicators, because of the fact that they affect the business world’s investment decisions.This is because the effect of foreign exchange rates on imports and exports also directly affects the success of the policy, in terms of a reduction in the foreign trade deficit. Today, the trends in the world economy as well as the movement of goods and services, labor, technology and capital throughout the world, regardless of the geographical boundaries, affect the economies of countries. Trade transactions involving more than one region normally require the conversion of a currency to another currency.

The purpose of this research is to determine the impact of exchange rates on the imports and exports of emerging countries. The intention of this research was to develop an empirical study which will illustrate the nature of the relationship between imports-exports and exchange rates. The movement in exchange rates will be assumed to be as a result of exchange rate policies. Additionally, it is a chance for the researcher to apply theoretical knowledge to a practical situation through critical and robust methodologies as described by Iqbal, Khalid & Rafiq (2011) and Bhattarai (2011). In the next section, the literature review is summarized with the objective of gaining adequate knowledge of the subject under research.

The aim of this study was to empirically analyze the relationship between foreign exchange rates and imports-exports for twenty two emerging countries over the period 1985-2012. The list of emerging countries used in the model, reproduced in the Appendix I, Table I.

In the literature, there have been several studies indicating the relation between real exchange rate (RER) and foreign trade. However, this study differentiatesfrom previous studies in two aspects.

First, although in previous studies generally real foreign exchange rate has been used as a dependent variable, in this study the real effective foreign exchange rate was used as an indicator that considers inflation differences, as well. Second, although most of studies in the literature investigate the effect of foreign exchange rates on the foreign trade balance, in this study the effect of foreign exchange rates on imports and exports were analyzed separately.

In the second part of the study similar studies in the literature and different opinions are mentioned. and In the third part,information about the empirical methodology and data are given and the empirical results are evaluated. Finally, the results and evaluations are mentioned.

## Literature Review

Some authors in economics such as Bailey (2009) and Bhattarai (2011) have arguedabout free independent exchange rate movements which are not the result of central bank' interventionsas a monetary policy maker.De-Paoli (2009)demonstratesthe arguments on the desirable degree of foreign exchange rate policyhavepersisted for decades. Similar arguments are postulated by Alam& Ahmed (2012) who indicated that someresearchersin the field of economicsand even academia have argued that exchange rates should be determined freely by the mechanism of supply and demand. In other words, markets should determine the optimal level of exchange rates.

Curcuruet al (2009) and Cruciniet al (2009)have also argued that from the perspective of modern economics, especially the New Keynesian economics, that view is arguably self-contradictory. They posit that markets are able to effectively achieve optimum efficacy and maximize welfare output when operated without distortions. However, from now on, relevant policies are undertaken to bolster the impact on diverse macro-economic variables. According to Curcuru et al (2009), the nominal exchange rate policy has no consequence in regard to determination of resource allocation. They further posit that real exchange rates and terms of trade can also self-adjust when there is a floating nominal exchange rate regime. Burstein& Jaimovich (2009)opine that Central Banks of different countriesencounter diverse and significant implementation difficulties of their own when establishing exchange rate policies. For instance, setting a wrong exchange rate peg would significantly affect the export and import activity of a country. Chit, Rizov & Willenbockel(2010) indicate that a country in South East Asia discovered that volatility of exchange rates depends on the policies that policy makers initiate. They argue that exchange rate policies have had a profound effect on the nature of international trade that countries have with other countries.

Obstfeld (2009) posits that one of the puzzles in global macro-economics is the small impact that large and significant exchange rate movements have on exports andimports. They conducted a study on international finance aspects and growth in emerging countries and found that there is a very small but significant impact of large exchange rate policy movement. Exchange rate policies changes can be identified by the changes in exchange rates of a country. Consequently, there is a significant disconnect between international products (imports and exports) and exchange rates. However,Darva (2012) and Darvas & Jean (2010) observe that large exporters are often large importers. From diverse studies that have deduced a positive co-integration relationship between exchange ratesand international trade, it is expected that there is a co-integrated relationship between exchange rates and exports-imports. However, there are several studies, such as Genc (2009),who indicates that there is a negative relationship between exports and exchange rates.

Nicita & Tumurchudur-Klok (2011), Nicita, Ognivtsev&Shirotori (2013) andNicita (2013) indicate that the relation between US import prices and exchange rates has been observed to be very significant in determining US import flows. Additionally, it is significant in understanding consumer prices.For instance, Choudhri& Hakura (2012)have deduced in their study on the exchange rate pass through to import and export prices that policies touching on exchange rates closely affect international trade of a country. In the case of the US, Curcuruet al (2009) and Xing (2010)argue that a weaker dollar, through devaluation or otherwise helps increase the competitive advantage. This is especially important in respect to exports through the purchasing power parity as discussed in Curcuru et al (2009), Nicita & Tumurchudur-Klok (2011), Nicita, Ognivtsev & Shirotori (2013)and Xing (2010).

Xing (2010) and Choudhri& Hakura (2012)have found out that their prices do not react to thefluctuationsof exchange rate policiesfor imports. To illustrate this,Choudhri & Hakura (2012) observe that between 2002 and 2008the US dollar depreciated in value significantly by approximately 35% vis a vis the abroadindex of other countries' currencies. In regard to pass through of exchange rates effects, Choudhr& Hakura (2012), Xing (2010) and Gopinath, Oleg& Roberto (2011)have defined it as completeness where a one-for-one response exists. In other words, when a 1% fluctuation in the exchange rate results in fluctuation of 1% change in the import price, then there is complete exchange rate pass through. Existence of this relationship indicates that there is a co-integration relationship between these two variables. Oleg & Roberto (2011) suggest that exchange rate movements due to policies can be passed through to goods and services trade prices. Alternatively, the price can be absorbed in producers' profit mark ups and margins.

Morrison & Labonte (2013) further argue that subsequent to a depreciation of an importer's currency, thereby raising the cost of imports, the foreign exporter might reduce his local currency export price in order to stabilize the prices in the importing country. However, this policy is a long strategy that is aimed at maintaining market share. However, markup exchange rates are industry specific and rely on the demand curve that the exporter experiences in a given country. Similar to these findings and deductions, De-Paoli (2009)demonstrateexporters usually experience a very erratic and elastic demand curve. Clearly, there is a relationship between imports- exports and exchange rate policies. This is the subject of this study and hence the contributions of literature such as that of De-Paoli (2009), Obstfeld (2009), Nicita, Shirotori & Klok (2013), Nicita, Ognivtsev &Shirotori(2013) and Morrison& Labonte (2013) to this research is very significant.A detailed empirical approach is presented in the next section.

## Data & Methodology

The main aim of the empirical analysis is to investigate the long run relationship between exchange rate and import-export by using the methodology of the co-integration Panel Model. The following research hypotheses were conceptualized asdescribed in Bhattarai (2011).

Ho: there is co-integration between imports-exports and the exchange rate of emerging countries

H1: there is no co-integration between exports-imports and the exchange rate emerging countries

Iqbal, Khalid & Rafiq (2011) posit thatalthough the Augmented Dickey Filler unit root/ stationarity test is oftenused, there are other models that can be used to ascertain similar deductions. In this study, the ADF model of unit roots was used since there is more understanding and knowledge of it than others such as Perron's.The data used in the analysis is drawn from the World Bank database for each of the selected emerging countries. The Panel co-integration methodis used with an annual frequency between 1985 and 2012. In total there are 616 observations for 22 emerging countries.

Since the emerging countries differ from each other in terms of their population, surface area and economic size, the amounts of imports and exports made by such countries will also be different. For this reason, as the import and export figures will be misleading, taking per capital income or domestic income as the basis for the projection will help avoid excluding other details. This is why the import and export figures have been proportionedby dividing into the GDP. Descriptive statistics pertaining to the variables are shown in Table 1. It can be seen that the highest average is observed in the import variable, while the highest standard deviation is in the effective exchange rate index variable.

Table 1. Descriptive Statistics of Variables

| Obs | Mean | Std. Err. | Min | Max |
|---|---|---|---|---|
| EXC | 616 | 43.79 | 43.79 57.78 | 572.54 |
| EXP | 616 | 34.26 | 19.58 7.70 | 121.31 |
| IMP | 616 | 44.68 | 29.77 8.51 | 150.46 |

Note:EXC, effective exchange rate index; EXP, Export on goods and services (%GDP);IMP, Import on goods and services (%GDP)

Before testing the presence of the unit root in the panel data models, the cross section dependence should be checked out. Should the hypothesis that the individual series is distributed independently cross sectional in the panel data sets be rejected, then 1st generation unit root tests should be employed. However, it was established that the cross section dependence was available in the panel data sets particularly where the countries were involved. In this case, implementation of 2nd generation unit root tests that take into account the cross section dependence make for more consistent, efficient and solid projections.

The following tests were used for testing out the cross section dependence in the panel data sets: Breusch Pagan (1980), Friedman (1937), Frees (1995,2004) and Pesaran (2004) tests. Breusch-Pagan (1980) and Pesaran (2004) tests are the estimators of whether there is cross section dependence in the T>N status.In this study the T>N status has been achieved through Breusch-Pagan (1980) and Pesaran (2004) tests for 28 years (T) covering the period between 1985 and 2012, and 22 emerging countries (N); moreover the projection was based on the assumption that each country was influenced by the individual time effect on a separate basis (HoyosandSarafidis, 2013). Shown in Table 2 are the Breusch Pagan(1980), Friedman(1937), Frees(1995, 2004) and Pesaran(2004) tests conducted for the effective exchange rate index and export (Model 1) and effective exchange rate index and import (Model 2) models.

Table 2: Cross-sectional dependence test results

| | Model 1 | | Model 2 | |
|---|---|---|---|---|
| Breusch Pagan(1980) | 110.52*** | | 69.24*** | |
| Friedman (1937) | 54.67*** | | 113.60*** | |
| Frees (1995, 2004) | 4.60*** | alpha = 0.10 : 0.09<br>alpha = 0.05 : 0.12<br>alpha = 0.01 : 0.17 | 4.63*** | alpha = 0.10 : 0.09<br>alpha = 0.05 : 0.12<br>alpha = 0.01 : 0.17 |
| Pesaran (2004) | 9.88*** | | 19.62*** | |

Notes:***,** and * indicates significance at 1%, 5% and 10% statistical levels respectively

The conclusion with respect to the existence or otherwise of cross-sectional dependence in the errors is not altered. The results show that there is enough evidence to reject the null hypothesis of cross-sectional independence.

Following the use of 2nd generation unit root tests taking into account the cross section dependence, the CADF (Cross-Sectionally Augemented Dickey-Fuller) stationary test was implemented in our study as in the general factor model form (Pesaran, 2003, 2007). Estimators from the 2nd generation unit root tests are able to separately test each country based on an effective exchange rate index and, import and export variable to find out whether the countries have a stationary process. The CADF test takes into account the spatial autocorrelation which can be implemented for the T>N status and also employs the augmented version of the ADF regression through lagged cross section means, and thus the initial difference of the regression eliminates the inter unit correlation.

A simple CADF regression can be described as follows:

$$\Delta Y_{it} = \alpha_i + \rho_i^* Y_{it-1} + d_0 \bar{Y}_{t-1} + d_1 \Delta \bar{Y}_t + \varepsilon_{it} (1)$$

Here, is the mean of N observations according to time t. Lagged cross section means and the presence of initial differences take into account the inter unit correlation through a factor structure. If there is autocorrelation in the error term or factor, regression can be augmented in a single variable statusand by adding the lagged initial differences of $\bar{y}_t$.

$\Delta y_{it} =$
$\alpha_i + \rho_i^* y_{it-1} + d_0 \bar{y}_{t-1} + d_1 \Delta \bar{y}_t + \sum_{j=0}^{p} d_{j+1} \Delta \bar{y}_{t-j} +$
$\sum_{k=0}^{p} c_k \, \Delta \bar{y}_{\mathrm{i},t-k} + \varepsilon_{it}$(2)

The degree of enlargement can be selected through a data criterion and via successive tests.Once the CADF regression is projected, the t-statistics averages (CADFi) of the lagged variables are obtained for achieving CIPS statistics.

$CIPS(N,T) = N^{-1} \sum_{\mathrm{i}=1}^{N} CADF_{\mathrm{i}}$,

the unified asymptotic limit of the CIPS statistics is not standard. Simulations were made for Pesaran, different sample sizes and determinability elements and the critical values were thus calculated. Pesaran CADF test statistic results for effective exchange rate index, export and import variables are shown in the Table 3. While the variables were not stationary on the level, they became stationary in the first differences.

Table3: CIPS second generation panel unit root test results

| | Constant | | | Constant/Trend | | |
|---|---|---|---|---|---|---|
| | EXC | EXP | IMP | EXC | EXP | IMP |
| level | -1.86 | -2.04* | -1.78 | -2.31 | -2.25 | -2.14 |
| 1st diff. | -3.56*** | -3.47*** | -3.75*** | -3.55*** | -3.62*** | -3.61*** |

Notes:***,** and * indicates significance at 1%, 5% and 10% statistical levels respectively.

In the study, despite the shocks between the effective exchange rate and export-import, co-integration tests were applied to test the existence of a long-term equilibrium.

Some of the tests are based on group-mean estimates, others on pooled estimates. Some take into account cross-sectional dependencies, while others do not. We will apply two representative panel co-integration tests: the very popular Pedroni (2004) test for panel co-integration and the recently introduced test by Westerlund (2007).

Since the Pedroni panel co-integration test (2004) is residual-based, it can be regarded as a panel equivalent of the Engle-Granger test for co-integration commonly applied in time series analysis. Pedroni proposes seven tests, of which three are group-mean tests and the remaining four are pooled tests (with the respective differing alternative hypotheses).

Table 4: Pedroni panel cointegration test results

| | Model 1 | Model 2 |
|---|---|---|
| Panel Tests | | |
| v-stat. | 2.828*** | 3.035*** |
| ρ-stat. | -6.885*** | -7.847*** |
| t-stat.(PP) | -18.173*** | -19.469*** |
| t-stat.(ADF) | -23.703*** | -24.933*** |
| Group Mean Tests | | |
| ρ-statistic | -1.498*** | -1.115 |
| t-stat. (PP) | -7.950*** | -7.028*** |
| t-stat. (ADF) | -9.493*** | -6.559*** |

Notes:***,** and * indicates significance at 1%, 5% and 10% statistical levels respectively.

Co-integration, which is a statistically significant null hypothesis in all statistics except for the panel rho statistics in the Model 2, is nonexistent and rejected.

While we apply the Pedroni test to search for long-run relationships among three different subsets of variables, the Westerlund test is only applied to the specifications for which the Pedroni tests provide strong evidence in favor of co-integration( Banerjee et al., 2004).

$$\Delta y_{it} = \alpha_i + a_{0i}(y_{it-1} - bx_{it-1}) + \sum_{j=1}^{K_{1i}} a_{1ij}\Delta y_{it-j} + \sum_{j=-K_{zi}}^{K_{3i}} a_{2ij}\Delta x_{it-j} + \varepsilon_{it} \quad (3)$$

where $a_{0i}$ is the error correction/speed of adjustment term. Penultimate termincludes lags and leads of $\Delta x$ otherwise need to assume exogeneity of x. If $a_{0i}$=0 there is no error correction so y, x not co-integrated.

This is because the co-integration test that has four self-error correction mechanisms does not allow heterogeneity in the flexible and short/long term parameters. In total fourtests, based on “group mean”and “pooled panel”. Moreover resistant values in possible inter unit correlations are achieved through boostrap. According to the Acaike data criteria, the lagged length is identified as 2.77 and the premise length as 2.09 in the Table 4. Gt, Ga, Pt and Pa test statistics values and z values as well as probability values were presented. According to the statistics other than Ga, Ho hypothesis was rejected, and thus a co-integration relationship is present between the effective exchange rate index and export. According to the Acaike data criteria, the lagged length is identified as 2.86 and the premise length as 2 for the Model 2. Gt, Ga, Pt and Pa test statistics values and z values as well as probability values were presented. According to the statistics other than Ga, Ho hypothesis was rejected, and thus a co-integration relationship is present between the effective exchange rate index and import.

Table 4: Westerlund Panel Co-integration Test Result

| | Model 1 | | Model 2 | |
|---|---|---|---|---|
| Statistic | Value | Z-value | Value | Z-value |
| Gt | -3.767*** | -8.243 | -2.977*** | -3.626 |
| Ga | -11.127 | 0.544 | -10.046 | 1.306 |
| Pt | -19.811*** | -11.532 | -15.563*** | -6.584 |
| Pa | -21.164*** | -9.588 | -15.424*** | -5.081 |

Notes:***,** and * indicates significance at 1%, 5% and 10% statistical levels respectively. Optimal lag/lead length determined by AIC with a maximum lag/lead length of 3. Width of Bartlett-kernel window set to 3. We allow for a constant, deterministic trend in the co-integration relationship.

Since a long term relationship was established between the variables as a result of the panel co-integration, Pooled mean group estimation (PMGE), mean group estimation (MGE) error correction model were established and both the short and long term parameters were projected together.

The MG projection method proposed by Pesaran and Smith (1995) allows evaluation based on long term parameter units, as it obtains long term parameters by using long term parameters means of the auto regressive distributed lag models created for each unit. While the PMG projection method proposed by Pesaran, Shin and Smith (1999) keeps the long term parameters fixed, it allows evaluation of the short term parameters and error variances based on units.

T=1,2,…..,T and groups i=1,2,…,N; and the dependent variable y is:

$$\Delta y_{it} = \emptyset_i y_{i,t-1} + \beta_i' x_{i,t-1} + \sum_{j=1}^{p-1} \lambda_{ij} \Delta y_{i,t-j} + \sum_{j=0}^{q-1} \gamma_{ij}' \Delta x_{i,t-j} + \mu_i + \varepsilon_{it} \quad (4)$$

There exists a long-run relationship between $y_{it}$ and $x_{it}$ which is defined by:

$$y_{it} = \theta' x_{it} + \eta_{it} i = 1,2, \dots \dots \dots N; \qquad t = 1,2, \dots \dots \dots T$$

where $\theta_i = -\beta_i'/\theta_i$, is the k x 1 vector of the long-run coefficients and $\eta_{it}$'s are stationary with possibly non-zero means (including the fixed effects). Hence, Equation (4) can be written as:

$$\Delta y_{it} = \emptyset_i \eta_{i,t-1} + \sum_{j=1}^{p-1} \lambda_{ij} \Delta y_{i,t-j} + \sum_{j=0}^{q-1} \gamma_{ij}' \Delta x_{i,t-j} + \mu_i + \varepsilon_{it} (5)$$

where $\eta_{i,t-1}$is the error correction term given by Equation (5) and thus $\emptyset_i$ is the error correction term coefficient measuring the speed of adjustment towards the long-run equilibrium. This parameter is expected to be significantly negative, implying that variables return to a long-run equilibrium.

Shown in Table 5 are the pooled mean group estimation and mean group estimation estimators for Model 1 and Model 2. The error correction parameters for Model 1 is negative and significant (-0.259) while there is a long term relationship between the effective exchange rate index and export. Error correction parameters demonstrate the balancing speed of the short term deviations in the next term resulting from the nonstationary nature of the series. Approximately 26% of the imbalances occurring during that term will be corrected in the next term and thus it will be ensured that it gets closer to the long term balance. Moreover, while the long term parameter for export is not statistically significant (-0.202), its short term parameter is statistically significant (-0.918). This proves that the 1% increase occurred in the export variable proportioned with the countries' GDPs in the short term has decreased the effective exchange rate index variable by 0.9%. The error correction parameter for Model 2 is negative and statistically significant (-0.278) and there is a long term relationship between the effective exchange rate index and import, the relationship which will enable approximately 28% of the imbalances occurring in one term to be corrected in the next term and thus ensure that the long term stability is achieved. The long term parameter for the import variable is statistically significant and positive (0.479), while its short parameter is statistically significant and negative (-0.521).This proves that the 1% increase occurred in the import variable proportioned with the countries' GDPs has increased the effective exchange rate index variable in the long term by 0.47% but also decreased it by 0.52% in the short term.

Table 5: PMGE result

| | Model 1 | | Model 2 | |
|---|---|---|---|---|
| Error Correction | -0.259*** | (0.044) | -0.278*** | (0.045) |
| Long-Run Coefficients | -0.202 | (0.218) | 0.479*** | (0.122) |
| Short-Run Coefficient | -0.918*** | (0.173) | -0.521*** | (0.145) |
| Constant | 30.048*** | (5.482) | 24.931*** | (4.577) |

Note: :***,** and * indicates significance at 1%, 5% and 10% statistical levels respectively. Figures beside estimated coefficients in parenthesis are standard errors;

## Conclusion

Although there are numerous studies on exchange rate effects on foreign trade balances in the literature,the results of the studies vary regarding methodology and data set.The error correction parameters for export is negative and significant (-0.259) while there is a long term relationship between the effective exchange rate index and export. Error correction parameters demonstrate the balancing speed of the short term deviations in the next term resulting from the nonstationary nature of the series. The error correction parameter for import is negative and statistically significant (-0.278) and there is a long term relationship between the effective exchange rate index and import, the relationship which will enable approximately 28% of the imbalances occurring in one term to be corrected in the next term and thus ensure that long term stability is achieved. The long term parameter for the import variable is statistically significant and positive (0.479), while its short parameter is statistically significant and negative (-0.521).

The result of this study shows that, there is co-integration between real effective exchange rate and export-import of emerging economies in the long run.In total 5 of 22 emerging countries (Bolivia, Cameroon, Dominica, Gabon and Mexico)have both long term relationship and short term parameters and are statistically significant.It is concluded thatoverall findings indicate that exchange rate effects support the expected results for the selected emerging countries.

## Appendices

Appendix ITable I: Emerging Countries in the Sample Data(alphabetically ordered):

| | | |
|---|---|---|
| Algeria | Ghana | Pakistan |
| Bolivia | Kiribati | Philippines |
| Cameroon | Lesotho | South Africa |
| China | Malaysia | St. Lucia |
| Colombia | Mexico | St. Vincent and the Grenadines |
| Costa Rica | Morocco | Tonga |
| Dominica | Nigeria | Venezuela, RB |
| Gabon | | |

Appendix IITable I: Pooled Mean Group Estimation(PMGE) Results

| Model 1 | Bolivia | | China | | Cameroon | | Colombia | | Costa Rica | |
|---|---|---|---|---|---|---|---|---|---|---|
| Error Correction | -0.883* | -0.024 | -0.495* | -0.089 | -0.159** | -0.767 | -0.236** | -0.119 | -0.084 | -0.126 |
| Short-Run Coefficient | -1.238*** | -0.659 | 1.717** | -0.759 | -1.577* | -4.451 | -1.878*** | -1.017 | -0.775* | -0.295 |
| constant | 112.726* | -5.296 | 58.209* | -11.246 | 17.624*** | -9.379 | 24.569** | -12.617 | 10.396 | -14.515 |
| | Algeria | | Gabon | | Ghana | | Kiribati | | St. Lucia | |
| Error Correction | -0.193* | -0.03 | -0.111*** | -0.059 | -0.434* | -0.038 | -0.001 | -0.097 | -0.217** | -0.094 |
| Short-Run Coefficient | -1.443* | -0.551 | -0.564** | -0.278 | -1.140** | -0.443 | 0.392*** | -0.214 | -0.138 | -0.094 |
| constant | 21.674* | -6.187 | 11.751 | -8.652 | 51.450* | -6.241 | 0.941 | -10.164 | 24.146** | -10.457 |
| | Morocco | | Mexico | | Malaysia | | Nigeria | | Pakistan | |
| Error Correction | -0.141 | -0.104 | -0.286* | -0.102 | -0.294* | -0.074 | -0.617* | -0.049 | -0.297* | -0.034 |
| Short-Run Coefficient | -0.268*** | -0.158 | -2.705* | -0.514 | -0.386** | -0.182 | -0.649 | -0.515 | -0.327 | -0.755 |
| constant | 14.809 | -11.251 | 29.131* | -9.964 | 38.865* | -12.441 | 66.669* | -8.823 | 32.444 | -4.208 |
| | Tonga | | St. Vincent and the Grenadines | | Venezuela, RB | | South Africa | | Philippines | |
| Error Correction | -0.239** | -0.109 | -0.139*** | -0.075 | -0.105 | -0.103 | -0.141 | -0.09 | -0.449* | -0.121 |
| Short-Run Coefficient | -1.059** | -0.417 | -0.256*** | -0.142 | -1.885* | -0.559 | -1.793* | -0.467 | 0.559 | -0.544 |
| constant | 25.178** | -12.301 | 15.090*** | -8.656 | 13.989 | -12.8 | 14.398 | -9.963 | 56.993* | -16.121 |
| | Dominica | | Lesotho | | | | | | | |
| Error Correction | -0.087*** | -0.048 | -0.093 | -0.074 | | | | | | |
| Short-Run Coefficient | -0.307* | -103 | -1.036* | -0.261 | | | | | | |
| constant | 8.77 | -5.749 | 11.236 | -9.411 | | | | | | |

Table II: Pooled Mean Group Estimation(PMGE) Results

| Model 2 | Bolivia | | China | | Cameroon | | Colombia | | Costa Rica | |
|---|---|---|---|---|---|---|---|---|---|---|
| Error Correction | -0.867* | -0.025 | -0.465* | -0.089 | -0.163** | -0.83 | -0.362* | -0.116 | -0.121 | -0.111 |
| Short-Run Coefficient | -1.949** | -0.873 | -0.358 | -0.908 | -1.178*** | -0.625 | -0.054 | -1.369 | -0.094 | -0.268 |
| constant | 93.335* | -5.061 | 46.583 | -9.88 | 15.793*** | -8.899 | 33.183* | -11.143 | 10.915 | -9.694 |
| | Algeria | | Gabon | | Ghana | | Kiribati | | St. Lucia | |
| Error Correction | -0.184* | -0.032 | -0.135** | -0.063 | -0.390* | -0.042 | 0.024 | -0.083 | -0.064 | -0.081 |
| Short-Run Coefficient | -1.006 | -1.001 | -0.831*** | -0.496 | -0.703*** | -0.404 | -0.042 | -0.072 | -0.12 | -0.089 |
| constant | 16.010* | -6.096 | 10.656 | -7.282 | 31.534* | -6.161 | -0.726 | -4.869 | 3.738 | -5.684 |
| | Morocco | | Mexico | | Malaysia | | Nigeria | | Pakistan | |
| Error Correction | -0.064 | -0.081 | -0.519* | -0.133 | -0.216* | -0.051 | -0.608* | -0.048 | -0.315* | -0.03 |
| Short-Run Coefficient | -0.149 | -0.126 | -2.342* | -0.758 | -0.124 | -0.216 | -0.107 | -0.642 | -0.227 | -0.313 |
| constant | 5.085 | -6.695 | 43.547* | -11.035 | 14.999* | -5.314 | 53.026 | -7.644 | 30.704* | -3.397 |
| | Tonga | | St. Vincent and the Grenadines | | Venezuela, RB | | South Africa | | Philippines | |
| Error Correction | -0.393* | -0.136 | -0.375* | -0.116 | -0.164 | -0.118 | -0.082 | -0.083 | -0.354* | -0.108 |
| Short-Run Coefficient | -0.252 | -0.363 | -0.182 | -0.128 | -0.126 | -1.437 | -1.484* | -0.444 | 0.417 | -0.479 |
| constant | 30.303* | -11.04 | 27.732 | -9.622 | 18.221 | -12.817 | 7.234 | -7.717 | 34.747* | -11.535 |
| | Dominica | | Lesotho | | | | | | | |
| Error Correction | -0.210* | -0.055 | -0.099 | -0.08 | | | | | | |
| Short-Run Coefficient | -0.239** | -0.997 | -0.309 | -0.2 | | | | | | |
| constant | 15.326* | -4.746 | 3.537 | -5.099 | | | | | | |

## References:


Alam, S. & Ahmed, Q. (2012). Exchange rate volatility and aggregate exports demand through ARDL framework: An experience from Pakistan economy. *Review of Applied Economics.* 8(1). pp. 79-94

Bailey, K. (2009). Is South-South trade a testing ground for structural transformation? New York

Basu, S. & Das, M. (2011). Export structure and economic performance in developing countries: Evidence from nonparametric methodology. Washington D. C: IMF

Bhattarai, K. (2011). Panel Data Models: Econometric Analysis. Hull University

Burstein, A. & Jaimovich, N. (2009). Understanding Movements in Aggregate and Product-Level Real Exchange Rates." Department of Economics, UCLA, working paper.

Choudhri, E. & Hakura, D. (2012).The Exchange Rate Pass-Through to Import and Export Prices: The Role of Nominal Rigidities and Currency Choice. WP/12/226. Washington D. C: IMF

Chinn, M. & Lee, J. (2009). Three Current Account Balances: A Semi-Structuralist View. *Japan and the World Economy. vol.* 21: 202-212.

Chit, M. Rizov, M. & Willenbockel, D. (2010). Exchange Rate Volatility and Exports: New Empirical Evidence from the Emerging East Asian Economies. Sussex: University of Sussex

Crucini, M. et al (2009). The Law of One Price without Borders: The Role of Distance versus Sticky Prices. National Bureau of Economic Research, working paper no. 14835

Curcuru, S. et al (2009). The Decomposition of the U.S. External Returns Differential. *Journal of International Economics*, forthcoming.

Darva, Z. (2012).Real effective exchange rates for 178 countries: A new database. Bruegel Working Paper 2012/06.

Darvas, Z. & Jean, P. (2010). The Threat of Currency Wars: A European Perspective', *Policy Contribution* 2010/12, Bruegel

De-Paoli, B. (2009). Monetary Policy and Welfare in a Small Open Economy. *Journal of International Economics vol*. 77: 11-22.

Duasa J. (2009). Asymmetric co integration relationship between real exchange rate and trade variables: The case of Malaysia. International Islamic University Malaysia, MPRA Paper No. 14535.

Fugazza, M. & Molina, A. (2011). On the determinants of exports survival.

Genç, F. (2009). Effect of Exchange Rate Changes on Export Performance in Turkey. Gazimagosa: Eastern Mediterranean University

Gopinath, G., Oleg, I., & Roberto R., (2011). Currency Choice and Exchange Rate Pass-Through. *American Economic Review*, vol. 100(1), pp. 304-36

Godwin, A. & Benson, U. (2009). The Effect of Exchange Rate Volatility on the Imports of ECOWAS Countries. *The Social Sciences*, 4 (4), pp. 340–346.

Hasanov, F. (2010). The Impact of Real Oil Price on Real Effective Exchange Rate: The Case of Azerbaijan. Discussion Paper Series 1041. DIW - Berlin German Institute for Economic Research. Berlin, August.

Hasanov, F. & Samadova, I. (2010). The Impact of Real Effective Exchange Rate on the Non-oil Export: The Case of Azerbaijan. ECO Economic Journal.

Hasanov, F. (2011). Dutch Disease and Azerbaijan Economy" Economics and Educational Research Consortium, Working Paper Series, No 11/03E.

Iqbal, A, Khalid, N. & Rafiq, S. (2011). Dynamic Interrelationship among the Stock Markets of India, Pakistan and United States. *International Journal of Human and Social Sciences.* 6 (1) pp. 31-37

Mattoo, A., Mishra, P. & Subramanian, A. (2012). Spillover Effects of Exchange Rates: A Study of the Renminbi. Working Paper 12/88Washington D. C: IMF

Mohammadi, T., Taghavi, M. & Bandidarian, A. (2011). The Effect of Exchange Rate Uncertainty on Import: TARCH Approach. *International Journal of Managing Business Review*. 1 (4), pp. 211-22

Morrison, W. & Labonte, M. (2013). China's Currency Policy: An Analysis of the Economic Issues. Washington D. C: Congressional Research Service.

Nicita, A. (2013). Exchange rates, international trade and trade policies. Policy Issues in International Trade and Commodities Study Series No. 56. New York: UN.

Nicita, A., Ognivtsev, V. & Shirotori, M. (2013). Global supply chains: Trade and Economic policies for developing countries. New York: UN.

Nicita, A., & Tumurchudur-Klok, B. (2011).New and traditional trade flows and the economic crisis.New York: UN.

Nicita, A., Shirotori, M. & Klok, B. (2013). Survival analysis of the exports of least developed countries: The role of comparative advantage. New York: UN.

Obstfeld, M. (2009). Lenders of Last Resort in a Globalized World. Keynote address, 2009 International Conference, Institute for Monetary and Economic Studies, Bank of Japan.

Xing, Y. (2010). The Yuan's Exchange Rates and Pass-through effects on the Prices of Japanese and the US Imports. *Comparative Economic Studies*, 52, 531–548.

World Bank (2013). Country indicator data base. Washington D. C: World Bank. Retrieved on January 10th 2014 from http://data.worldbank.org