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Investigating the Dynamic Empirics between Outflow of Remittances and Economic Growth: A Case Study of Saudi Arabia

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Abstract *To meet the developmental goals and fulfill the domestic labor demand of Saudi Arabia, more than 9.5 million skilled, semi-skilled and highly skilled workers from across the world are imported. After the United States of America (USA), it is the second-largest which is responsible for the larger outflow of remittances. This study is an empirical investigation to explore the impact of remittances outflow on the economic growth activity of Saudi Arabia. Furthermore, it also tests whether this outflow causes inflation in the Saudi economy. For the sack of empirical investigation, this study utilized annual time series data ranging from 1970 to 2017. Before estimating the short-run and long-run estimates by the application of the Auto-Regressive Distributed Lag (ARDL) method, time-series properties of data are explored using the Augmented Dicky Fuller (ADF) test.*

Key Words:
Remittances Outflow, Inflation, Economic Growth

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Introduction

Workers' remittances are usually expressed as a part of migrants' incomes distributed from the migration destination to their place of origin. The literature cites it as a term generally restricted to the cash transferred by the migrant to their families and communities. As migrations continue to rise, the resultant growth of remittances has also been high across the world. For the last two decades, the migrants' remittances are rising continuously, the reasons behind may be the easy and cheap money transfer and increasing stock of migrants in developing and developed countries across the world. It is recognized in the factbook (2010) of World Bank that approximate volume of documented and undocumented flow of remittances is about 400 billion dollars annually and these are possibly the largest source of external finance in developing countries. Various issues had been linked with remittances, have now become the subject of extensive debate recently, among researchers and scholars across the world. A few of these issues include finding the factors affecting remittances, discussion on transfer channels and their economic outcomes on host economies and the countries of origin (Acosta, 2009).

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With the shift of global economy towards knowledge-based economies, researchers and policymakers shifted their attention to the development of more and more skilled human capital to compete to participate in the economic development process globally, regionally as well as nationally (OECD, 1996). It is further suggested that for an economy, to grow and accelerate the economic growth process, high-quality human capital is an important ingredient. It is a widely admitted fact that the growth rate of economies with a better endowment of human capital is higher compared to others. Furthermore, it is also argued that the mobility of skilled labor force across the region must have a meaningful effect on the economic perspectives of the economies (Herbst and Rok, 2013).

Saudi Arabia, the largest country in the Middle East possessing a per capita GDP of 13,944US$ in the fiscal year 2012, like all other countries in the region, depends heavily on oil exports and it constitutes a major component of export revenue. Following the recent trends of globalization, it is working on the emerging sectors to promote its economic growth. The sectors include infrastructure, trade, telecommunication, and social development. Keeping in view the total workforce requirements of the rapidly developing economy of Saudi Arabia, it was clear that the national workforce was not sufficient. Therefore, the policy agenda of the initial phase of development include importing as much foreign labor force as required to fill the gap that could help to achieve the developmental goal of the kingdom. The foreigners working in Saudi Arabia immediately remit their earnings to their home countries and do not prefer to spend or consume. Hence, the outflow of remittances has various implications for the economy and its growth process.

The process of Saudization has been on the move since the 90s and got further improvement through the introduction of labor policy jurisdiction under the ministry of labor in 2004. The major clauses of Saudization include national employment quotas, where it allowed for a 5% increase in the employment share of Saudis, it also allowed for low Saudization in low wage sectors. Secondly, the policy reserved administrative, clerical, security and sales categories for Saudis and did not allow for granting visas for these categories. Thirdly, a human resource development fund (HRDF) was introduced for initiating the training and initial employment of Saudi workers. HRDF helped to subsidize the training and initial phase of jobs of Canadians. Regarding the efficacy of the HRDF initiative, it is recently reported that more than three fourth of the employees did not stay to their jobs right after the completion of the subsidizing period. In addition to all this, the policy banned the renewal of the labor card of companies failing to fulfill the prescribed employment as suggested by the policy (Steffen, 2012).

Recent research broadly discussed the impact of remittances on the macroeconomic indicators of the recipient country and determinants of remittances inflow. However, there are very few studies present, discussing the impact of remittances on the macroeconomy of host countries. Against this backdrop, the present study is an empirical investigation of the nexus between remittances outflow and economic growth in the Saudi economy; furthermore, it tried to explore the statement that whether outflow of remittances causes inflation in the host country. The empirical analysis is organized as, following the introduction in section one, section two presents a review of theoretical and empirical studies addressing the same issue. Section 3 provides a brief insight into the policies and trends of remittances outflow in Saudi Arabia. Methodology, data and variables discussions contained in section four and section five concludes the study.

Literature Review

Countries in the Middle East and GCC face the public sector absorption issue today, i.e., in the long run, most of the employment growth for nationals has to come in the private sector Steffen (2012), this creates many issues and problems for the residents and hence to the economic conditions of the host country. Working and exploring the dimensions of the Saudi labor force, Asmari (2008) discussed and investigated the challenges and ambitions of the Saudi labor force. The study aimed to impart a few background information on the development of human resources in Saudi Arabia and the cycle of its job replacement. The study tried to focus on the issue that there is still a need to initiate more efforts to train and educate the local workforce so that dependence on foreign labor particularly in the private sector may be reduced. Moreover, the study draws attention to the problems and difficulties faced by the Saudi government to raise the local indigenous labor force participation. It concluded that over time, because of globalization, qualitative changes in the economic environment are taking place rapidly across the world; hence, there is a need for time to introduce policy implications for hiring and raising the standard of the labor force. Furthermore, the introduction of sound national employment and labor policy is also required.

Workers' remittances outflow constitutes the major leakage from the economic cycle of a country. Alkhatlan (2013) applied the recent methodology of Autoregressive Distributed Lag (ARDL) on a sample of time series data to investigate the nexus between the outflow of remittances from Saudi Arabia and economic growth. Vargas-Silva and Huang (2006) worked on similar lines and argued that remittances are the outcome of diverse or changing macroeconomic environments of the host country rather than the home country. The policies formulated in the host country decide on the volume of migrants. The volume of remittances depends on the decision of labor in the host country, people who decide to reside temporarily, remit more to their home country and vice versa. A viable and feasible financial sector and job security is also an important contributor to decide on the number of remittances. While exploring further dimensions, Swamy (1981) found that remittance flow also depends on the difference in the rate of interest between the two countries. However, the study found the exchange rate as an insignificant factor in this regard. On the same lines, Taghavi (2012) explored the empirical link between the outflow of remittances and its relationship with the economic recovery of the Gulf Cooperation Council (GCC). The empirical analysis found that short-run shocks caused by the outflow of remittances of the host country are recovered. However, the long-run high volume of remittances may cause a heavy burden on the economy. The author further mentioned that GCC countries offset the oil prices in the world market and hence can absorb the shocks in the long run.

Methodology, Data, and Variables

Sound empirical methodology and reliable data set to ensure the validity of empirical results. The present study utilized an annual time series data set ranging from 1970 to 2017. The data set is collected through the various issues of International Financial Statistics (IFS), issued by the International Monetary Fund (IMF) and World Development Indicator (WDI).

A series of studies by Peseran and Shin (1996); Peseran and Peseran (1997); Peseran and Smith (1998) and Peseran *et al*. (2001) have introduced this technique of cointegration known as Autoregressive distributed lag (ARDL) bounds test. This is preferred over the Johansen cointegration technique, as it does not require variables to be integrated of the same order, rather it can estimate the empirical relations without the prior knowledge of the order of integration. It has another advantage that technique is suitable for estimating and exploring the existence of cointegration with a small number of observations (Peseran *et al*, 2001). Furthermore, it avoids the endogeneity problem that emerges with other techniques of cointegration. In addition to this, a dynamic Error Correction Model (ECM) can be derived from ARDL through simple linear transformation (Banerjee et al 1993) that integrates the Short-run dynamics with the long-run equilibrium without losing long run in formations.

Variables used in the study include Real Gross Domestic Product (GDP), constructed by taking the ratio of nominal GDP with the Consumer Price Index (CPI). Trade openness, constructed by taking the ratio of exports with GDP. Remittances as a share of GDP, public spending constructed by taking the ratio of government spending to GDP and real interest rate constructed by deflating the deposit rate. The inflation rate calculates by taking the growth rate of the consumer price index.

Empirical Results

Table 1 below shows the result of the Augmented Dicky Fuller (ADF) unit root test. Real GDP (LY_t) is stationary at the level and becomes stationary after taking the first difference. Similarly, remittances as a share of GDP and trade openness are integrated of order one. However, the inflation rate and real interest rate (*RIR*) is stationary at their level. The empirical results below justify the application of Autoregressive Distributed Lag (ARDL) methodology for estimating the short-run and long-run estimates.

Tables 1. ADF Unit Root Test Result

Variables	Level	1st Difference	Order of Integration
LY_t	-1.17814**	-5.48561	I (1)
INFR	- 3.05663**	-4.45329	I (0)
$L(TOPEN)_t$	-0.85208	-4.75157**	I (1)
$L(REM)_t$	-0.92056	-6.32583**	I (1)
RIR	-1.866887	-5.34547**	I (0)

*Note: ** shows significance at 5% level of significance, unit root is tested by applying Augmented Dicky Fuller (ADF) test against the null hypothesis of the existence of unit root.*

The next step is to find the existence of a long-run relationship by applying the bounds test of cointegration, empirical findings are given below. The results presented in Table 2 show that there exists a long-run relationship. In the next step, we estimate the short-run and long-run estimates.

Table 2. Results of Bound Test to Co-integration

Country	F-Statistics	Probability
Saudi Arabia	8.22 (3.67)	0.0053

Note: Figures in parentheses show the bounds of the critical values, which are taken from Pesaran, et al.

(2001). we rejected the null hypothesis of no co-integration if the calculated F-stat is higher than Upper bound. Here we have taken unrestricted intercept, no trend and number of regressors k=5

Table 3 below presents the short-run estimates of the ARDL model. The outflow of remittances has negative and significant effect in the short run implying that this outflow retards the growth process in the short run through the lack of effective demand from the foreign labor force and their earnings and also due to capital flight from their incomes, in the short run public spending exhibits negative effect while trade openness and real interest rate have a positive and significant impact in the short run. However, the effect of inflation on GDP per capita is negative and robust in the short run. The lagged coefficient of real GDP per capita is negative and significant and it depicts the speed of adjustment and termed as ECM. It shows that 41 % of equilibrium restores itself when disturbed in the short run. In the long run, exports are major sources that affect positively and robustly to economic growth in the long-run effects of migrants' remittances are positive and insignificant. However public spending a

Table 3. Short Run Estimates of ARDL Methodology

Variable	Coefficient	Std. Error	t-Statistic	
C	-0.704463	0.436596	-1.613535	DW stat = 2.01321
Δ*(Yt(-1))*	-0.41341	0.042306	-3.15481	Adjusted R-squared
Δ*(LREM)*	-0.674752	0.048846	-13.81386	= 0.75668
Δ *(LPSP)*	-0.368977	0.128275	-2.876457	F-statistic =
Δ *(TOPEN)*	0.024581	0.025149	2.977423	11.57420
Δ *(RIR)*	0.279446	0.110381	2.531646	S.E. of regression =
Δ *(INFR)*	0.057547	0.004563	12.61165	0.065413

*Note: **shows significance at 5% level of significance, results estimated in Eviews 07.*

The long-run equation is estimated by normalizing the coefficients estimated through the ARDL method. The long-run equation is given below.

*L(Yt) = 0.789 + 0.5137LREM (-1) + 3.94LPSP (-1)** + 0.05LTOPEN (-1)* + 0.263*(RIR (-1) + 1.9781*INFR(-1)*

Conclusion and Recommendations

The present analysis is an empirical effort to test the dynamic relation between remittances outflows and the economic growth activity of Saudi Arabia. The test has also tried to explore whether a high volume of outflow of remittances causes inflation in the Saudi economy. Theoretical and empirical work carried out found that Saudis nationals prefer to work with the public sector and their tendency to work and stay in the private sector is minimal, they must be encouraged through providing incentives to work in the private sector. Empirical results found that in the short-run foreign workers do not consume or invest in the Kingdom and immediately remit their earnings to their home countries, therefore, the impact is found to be negative and insignificant. Findings suggest that public spending and openness to trade i.e. exports revenue are major sources of long-run economic growth. The policies pursued by the government to spend more and more create more and more job opportunities for foreigners and nationals as well. Positive but insignificant impact of real interest rate is observed in the short-run as well as in the long run and hence holding of funds within the country by the foreigner workers is enhanced through this. The major implications and policy recommendations suggest more and more efforts by the public sector to enhance the education and training in the Kingdom so that dependence on foreign labor force may be reduced. Furthermore, to increase the consumption and investment by the foreign labor force, incentives are required to be introduced by the public sector. A policy framework is required to formulate for encouraging and raising the participation of female nationals in the services sector.

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