



## Terrorism and Worker's Remittances in Pakistan

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### **Abstract**

This study was attempted to explore the long term dynamic relationship between Terrorism and remittances in Pakistan. Annual time series data from 1995 to 2013 was used for analysis. A unit root analysis is carried out to examine the stationarity of variables. The long run liaison is tested by using Johansen and Juselius Cointegration approach. The short run associationship is examined by vector error correction model. The analyses reveal statistically significant short and long run relationship between remittances and terrorism. The results are according to push theory. Further the results show evidence of short and long run relationship between remittances and economic growth. The analyses are important for economic policy makers for decision making purpose.

Keywords: Worker Remittances, Terrorism, Cointegration, Pakistan.

### **1. Introduction:**

Terrorism has made the whole world in great danger. Number of people has been made homeless, dead and injured throughout the world. Among the affected countries of the world Pakistan is severely engulfed by terrorism. Terrorism not only made the people of Pakistan homeless and dead but also affects the economy as well. Due to it, macroeconomic indicators are greatly affected, which has compelled a number of people to migrate to foreign countries for

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fulfilling the basic needs of their families in Pakistan. That people send a large number to remittance to Pakistan. Pakistan has 10th position in the world for remittances. In 2012 \$13 billion remittances were sent by migrants.

Remittances can be simply defined as, the transfer of foreign money by the migrant workers into their home countries. According to Ratha (2003) remittances is the sum of three components, first workers remittances under the heading of “current transfer” in the current account of BOP, second employee’s compensation under the heading of “ income” , which consist of wages, salaries, and some other benefits, third is migrant’s transfer which are recorded under the heading of “ capital transfers”. Because of the absolute volume magnitude of the remittances, and supremacy of these flows compared to the FDIs, development assistance and in some cases the trade related transactions, the development experts inclined to focus and examine the importance of remittances which are generally regarded as a dependable sources for growth, enhancing welfare and poverty mitigation in the developing world. Remittances directly make a growth in the recipients ’income, smoothening consumption and facilitating investment in human capital, a major source of development. The major indicators for the indirect effects of the remittances are the growth in GDP, increase in fiscal space and the access to foreign exchange.

If remittances are compared on the basis of crises in the home countries, the effect will be different on the behalf of both of receiver and sender. The country where there are crises such as terrorism will have no impact on remittances flow, because the sender is living abroad and can easily send the remittances to remove their families from the crises. For example in case of Pakistan, when the operation started in KPK the effect was recorded only on the receiver side, the workers who were working in the GULF or some other countries sent remittances easily. It is not only in case of Pakistan, remittances also help the people of Sri Lanka during Tsunami and Bangladesh during Floods. So remittances are the stable form of foreign inflows as compared to other form of inflows (FDI & FPI). The different types of remittances are family remittances, migrant worker remittances, social worker remittances, and community remittances.

What are the main determinants of remittances? On the behalf of this question different researchers investigated different determinants. According to Sakka and McNabb(1999) the major determinants are, the income level, interest rate differential, black market and the official exchange rate differential of both the sending and receiving countries. Some other determinants were also identified by the researchers like GDP per Capita, unemployment, CPI, trade openness, debt, economic growth, polity, corruption, durability and poverty. In the past, slight focus has been given to the impact of terrorism on remittances. There is little empirical research on this study. In this study different determinants of remittances will be observed, such as unemployment, CPI, exchange rate, trade openness, market size and index of terrorism will be used which contains the element of events, injuries and fatalities.

The push and pull theory clearly defines the economic factors of migration in both the sending and receiving country. According the Push and Pull theory demographic pressure, unemployment, and the low standard of life in the home country is considered to be the Push factors. The demand for labors, promising economic opportunities, and political stability and freedom are the pull factors for the reviving country. Datta (1998) explained that any kind of migration, although documented or undocumented, forced or voluntary, can be described in terms of Push and Pull factors. Push factors are the negative characteristic for the origin country, and the Pull factors are positive attribute for the receiving country (Datta, 2002).

This study will help the investors and the policy makers to identify the dynamics of terrorism and its impact on workers remittances. This study is very important for investors to think about the economy where they sense more profit. For academia this study will be the extension in

literature while for policy makers it will provide support to make suitable and better policies to reduce terrorism in order to enhance the flows of workers remittances.

The paper consists of V sections. Section II briefly explains the empirical literature on the relationship between terrorism and workers remittances. Section III explains variable specification, methodology and data description. Section IV is about empirical results while conclusion and discussion is explained in section V.

## ***2. Review of Literature***

Remittances are the portion of earned income that migrant workers choose to send to the families they have left behind. Remittance inflows are demarcated as private income transfers from one or more family members living and working abroad back to the remaining family unit in the home country (Chami, Cosimano and Gapen, 2006). Nearly half a million Pakistani economic workers are working overseas, mostly in Middle Eastern countries because of oil boom. The experts inclined to focus and examine the significance of remittances which are observed as a source for growth, removing poverty and for the improvement of welfare in the developing world. In case of Pakistan which is the capital deficient country, workers remittances play important role. Remittances are the important source of foreign exchange in Pakistan, which help in enhancing economic growth, reduction in unemployment, recovering adverse effects of oil prices shocks and improving the living standards of recipient households. Pakistan has been considered one of the major labors exporting countries since the mid-1970. These labors sent huge amount of their earning to Pakistan.

In particular, this is a broad area for research, which enables the policy makers to formally channelize these inflows in order to shift it into the productive investments. Russels (1986) observed the two main categories of the workers remittances. The first is socio demographic characteristics of migrants and their families and the second is the macroeconomic and political variables. According to him, the first category contains the determinants like ratio of females in population in the host country, household income level and marital status, year of education and occupational level of migrants. The second category (macroeconomic and political variables) consists of inflation, real wage rate, political and economic condition, employment, growth and number of workers. Russell (1986) showed different macroeconomic determinants of remittances, which are exchange rate, interest rate differences, political risks, economic situation of both the sending and recipient countries and the income level of the migrants, High rates of inflation in the home country could cause increased migration due to the fact that real income would be unstable in the home country. High rates of inflation would then cause migrant workers to remit more. However, the authors also noted that if inflation depreciated the domestic currency, then there would be less pressure for migrants to remit more foreign currency.

The push and pull theory of migration highlights different push and pull factors which are the causes of migration between sending and receiving countries. The theory indicates different push factors for the sending countries which are unemployment rate, war on terrorism, inflation, and some other conditions. Among above war is non-economic factor. The pull factors for the receiving countries are, demand for the labors, economic opportunities, and political freedom and some others. Push factors show the negative characters of the country while pull factors show the positive characters (Datta, 1998).

Ahmad et al (2008) studied the macroeconomic determinants of international migration from Pakistan. They worked on the push and pull theory of migration, which indicates the economic factors of migration among countries. They used the time series data between 1973 and 2005, and applied the Cointegration and vector error correction model to find the long and short term

effect of these determinants. Along with other determinants they used the inflation and real wage rate are the key control variables. The other control variables they used are unemployment rate and market size, remittances, and the number migrants from Pakistan are used as a dependent variable. They found that the inflation, unemployment and the real wage rate are the push factors for the migrants. They observed that migration from Pakistan has positive relation with inflation and unemployment rate and negative relation with real wage rate. According to them, remittances and market size are positively related to the international migration. So remittances are considered pull factor which attract more migrants.

The inflation rate at the source country is another macroeconomic element of migrants' remittances. As high inflation affects the left-behind family's income level negatively, remittances may increase because of the altruism motive explained above. However, high inflation may be interpreted as a signal of instability as well and therefore generates a decrease in remittances (Glytsos, 1988; Elbadawi and Rocha, 1992; Aydaş et al., 2004). Inflation has negative impact on workers remittance, [Katselli and Glytsos (1986); Elbadawi and Rocha (1992)] Adams (1998) demonstrated that worker remittances do have significant positive effects on domestic savings and financial investment. Blade (2011) used the data for more than 30 SSA countries for the period between 1980 and 2004. He investigates the effect of saving and remittances on investment by using the OLS and 2SLS techniques. They observed that remittance and foreign aid have positive impact on saving and investment in SAA. There is significant impact of remittances on GNP growth and savings in case of Pakistan (Burney's, 1987). He used the data from 1969 to 1986 to find the empirical result while observing the impact of remittances from the Middle East to Pakistan.

Katseli and Glytsos (1986) used the Greek data. The period they selected was from 1961 to 1983. He used data for host (Germany) and home (Greece) countries. Their empirical results suggest that in host country remittances have positive relationship with income per capita while in the home country the relation is negative with income and real interest rate. In the context of German economy the increase in interest rate leads to enhance in remittances outflows from Germany to Greece.

Wahba (1991) specified different determinants of remittances; they found that black market premium and interest rate differential have significant impact on remittances inflows. There are different results about the differential interest rate and black market premium. Elbadawi and Rocha (1992) suggest no significant effect of differential interest rate on remittances, while Sakka and McNabb (1999) observed negative effect of differential interest rate on remittances. To which extend remittances are affected by the origin country's currency policies and the interest rate differentials compared with the host country, is another issue for the ongoing debates. While according to (Swamy, 1981; Straubhar, 1986 and Chami et al. 2003) there is no relationship between remittances and these variables, other studies, especially as regards Turkey shows the opposite. Indeed, Aydaş et al. (2004) argue that Turkish workers remittances increased with interest rate differentials from 1979 to 1993. Using more recent data (1993-2003) on Turkey, Alper (2005) conclude that remittances are positively affected by the interest and currency rates on the long-term and negatively affected on the short term.

Remittances have become an important source of foreign exchange earnings, largely from developed countries to developing countries. The availability of foreign exchange through remittances not only enhance the economic growth in the recipient countries but also helps in the reduction in current account deficit and external debt as well. Real exchange rate is a significant determinant of remittances (Faini (1994).

Swami (1981) and Glytsos (1988) have found no effect of exchange rates on remittance flows. Aydas et al (2004) studied the determinants of remittances in Turkey. They used different macroeconomic variables. Among them, inflation rate, growth rate and exchange rate policies are my concern. According to them, inflation rate has negative impact on remittances while exchange rate policies and growth attract more remittances into Turkey. Chandavarker (1980) reveal that exchange rate has positive impact on remittances.

Dorantes and Pozo (2004) examined that the real exchange rate would appreciate about 22 percent while doubling the worker remittances by studying the panel of 13 LAC countries. Remittance flows were a considerable source of foreign exchange; according to Wahba (1991) study. Remittances accounted for 41% of Egyptian exports of goods and services. The Egyptian government had therefore made efforts to increase the remittance flows through formal channels by not taxing interest accrued on officially held deposits of foreign currency and by issuing bonds in foreign exchange denominations to Egyptians living in other countries.

Kumar (2010) used annual data from 1981 to 2008. They studied the impact of remittances and trade openness on income in Vanuatu. They found that trade liberalization in goods and services boost remittances which led to growth in income in Vanuatu. Hussain and Syed (2012) found the impact of remittances on investment in Bangladesh. They used the ARDL test with CUSUM & CUSUMSQ tests. According to them remittances and trade openness have positive influence on investment in Bangladesh. They further added that favorable policies for attracting more remittances will enhance investment in Bangladesh.

A number of studies found positive relationship between remittances and economic growth. There is significant positive relationship between remittances and economic growth (Taylor, 1992; and Faini, 2002). Remittances can help the entrepreneur by providing much needed funds to handle different constraints in the way of growth. They can finance education and health through remittances thereby promoting growth. When the remittances are through formal channels can enhance the ability of the country to get access to international capital market. Amjad (1986) used time series data for the period of 1969 to 1986. He used different macroeconomic determinants of remittances. He found that there is a positive effect of remittances on GDP growth. Zafar and Sattar (2005) in their study examined the contribution of workers remittances on economic growth in Pakistan. For their study they used the time series data from 1972 to 2005. By using the multiple regression frame work they found that real GDP growth has positive relation with workers remittances. Their finding suggests that when there are right policies in government the remittances will be shifted into fruitful investment. They argued that the government should provide opportunities to attract more remittances.

Chami et al. (2003) observed the negative relationship between remittances and GDP growth by using panel data of 113 countries. On the behalf of negative impact of remittances on GDP growth the highlight the sound evidences i.e., compensatory flows and countercyclical nature of remittances and significant constraints in the way of converting remittances into fruitful investments.

Ahmad (1986) argued that remittances have no effect on GDP growth. Al Khathlan (2012) used ARDL and ECM econometric tools to find the long and short run relationship between worker remittances and economic growth in Pakistan. The data he has taken for the study from 1976-2010. The results indicate the presence of long and short run relationship between workers remittances and economic growth in Pakistan while Inflation rate has negative impact on both in short and long run in that country.

Fayissa and Nsiah (2008) examined the study on 37 African countries and found the positive impact of remittances on economic growth. Habib and Nourin (2006) found the mix

impact of remittances on economic growth in different economies of south and South East Asia. According to them the relationship between remittances and economic growth is negative in Srilanka, Thailand, Indonesia and India, while in Pakistan, Bangladesh and Philippines the relation is positive.

Chami and Jahjal (2003) observed the negative impact of worker remittances on economic growth. They gave the reason for that most of the inflow in the shape of remittances are spent in personal consumption like build houses, purchase of land, or buying jewelry. Pone et al (2010) studied the macroeconomic determinants of remittances in dollarized economies. Different determinants they used like GDP, interest rate differential, M<sup>2</sup>, and employment rate. By using the co-integration and common cycle test they concluded that with GDP the relation of remittances is negative while with the rest of the determinants the positive relation is found.

### 3. *Data Description and Methodology*

The study aimed to find the long run dynamic relationship between Terrorism and Workers Remittances. Yearly data is used from 1995 to 2013. The dependent variable is workers remittances and the explanatory variables are market size (GDP), Inflation (CPI) Trade openness (TO), Unemployment (UM), Exchange Rate (ER) and the Terrorism index. Terrorism index is composed of Events, Fatalities and Injuries. Terrorism index was measured as 0.50EV, 0.25FA and 0.25IN. Kamran (2013) also used this index for his study. Various macroeconomic variables are used in this study for which the data is obtained from World Develop Indicators (World Development, 2013), State Bank of Pakistan and Transparency International. For terrorism data is taken from Global Terrorism Database (GTD) is used.

The specified model can be written as:

$$\text{LnWR} = \beta_0 + \beta_1 \text{Ln GDP} + \beta_2 \text{LnER} + \beta_3 \text{LnUM} + \beta_4 \text{LnCPI} + \beta_5 \text{LnTO} + \beta_6 \text{LnTIND} + \mu t$$

Where

LnWR = Natural log of worker remittances

Ln GDP = Natural log of gross domestic product

LnER = Natural log of exchange rate

LnUM= Natural log of Unemployment

LnCPI = Natural log of inflation

LnTO = Natural log of trade openness

LnTIND = Natural log of terrorismindex

$\mu t$  = error term

This study aimed to examine long run effect of terrorism on remittances. The long run relationship is aimed to be captures by Johansen and Juselius cointegration approach. This preliminary analysis involves checking stationarity of data. The stationarity is examined by using unit root analyses. It tells about whether data is stationary at first difference, at second difference or at level. Augmented Dickey Fuller (ADF) (1979) and Phillip-Peron (PP) (1988) are most commonly used tests for checking the stationary/non stationary of data.

The ADF test can be written as:  $Y_t = \pi Y_{t-1} + \mu t$ , where  $Y_t$  is variable studied,  $t$  is time period,  $\pi$  is coefficient,  $\mu t$  is the disturbance term. The regression model is explained by the following equation;  $\Delta Y_t = (\pi - 1) Y_{t-1} + \mu t = \gamma Y_{t-1} + \mu t$ , Whereas  $\Delta Y_t$  is first difference for the underlying variable. The first difference has been taken to make the time series data stationary.

The Johansen and Juselius cointegration can be applied on variables that are stationary at same order either I(1) or I(0). The johansen and juselius cointegration test checks the long run

association between the variables. This test is based on two likelihood ratio tests for the identification of the number of co-integrating relationships. The Trace test and Maximum Eigen value test. The maximumeigen-value test is used to test H0 (null hypothesis) of the existence of “r” co-integrating vectors compared to the alternative of “r+1” co-integrating vectors. The statistics of max-eigen value is given as:  $\lambda_{\max} = -T \ln(\mathbf{1} - \lambda_r + \mathbf{1})$ , where “T” indicates the observations and  $\lambda_{r+1}, \lambda_{r+2} + \lambda_{r+3} \dots, \lambda_n$  denotes the n-r smallest squared canonical correlations. The Trace statistics test assesses the null hypothesis of the existence of “r” co-integrating vectors against the alternative hypothesis of “r+1” co-integrating vectors. The statistic test is given as;  $\lambda_{\text{trace}} = -T \sum \ln(\mathbf{1} - \lambda_i)$ .

In order to apply Johansen and Juselius cointegration procedure, lag length selection is necessary. To choose the lag order, some commonly lag order selection criterion are used, such as Akaike Information Criterion, Schwarz Information Criterion, HQ and FPE.

#### 4. Empirical Results

The first step is to check the stationarity of the data. The unit root analyses is carried out for this purpose. Table 1 exhibits the ADF and PP tests for the LnWR, LnGDP, LnCPI, LnTO, and LnTIND. According to ADF test all the variables are non-stationary at level and stationary at first difference and PP test confirm the results. Thus, we observed that the series is I(1). Hence the assumption of johansen and juselius cointegration test is fulfilled and we can now test the relationship between variables.

Table 1 Unit Root Test

Variables	ADF Test		PP Test	
	At Level	1 <sup>st</sup> difference	At Level	1 <sup>st</sup> difference
LNWR	-1.6935	-3.5912	-1.5676	-10.984
LNGDP	-2.3353	-5.5762	-2.518	-11.487
LNCPI	-2.2131	-3.6742	-1.2818	-3.0432
LNTO	-1.3844	-4.1007	-1.6494	-10.385
LNER	-0.4586	-3.6413	-1.0126	-8.6857
LNUM	-1.6663	-3.355	-1.4111	-10.75
LNTIND	-0.9212	-4.4332	-1.5316	-10.469
Critical Values				
1% level	-3.461	-3.461	-3.4591	-3.4592
5% level	-2.8749	-2.8749	-2.8741	-2.8741
10% level	-2.5745	-2.574	-2.5735	-2.5736

For a selection of suitable lag value, Lag Length Criteria is used. We use value of Schwarz Criterion (SC), and it is minimum at lag 2, which indicates that this lag is suitable for testing co-integration between Terrorism and workers remittances. Table 2 shows the lag criteria.

Table 2 Statistics for Selection of Lag Order

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-77.4416	NA	5.05e-09	0.760735	0.868027	0.804053
1	3774.303	7425.886	6.68e-24	-33.49822	-32.6399	-33.15168
2	3942.603	313.8564	2.28e-24	-34.573	-32.96362*	-33.92323
3	3998.839	101.3262	2.15e-24	-34.63819	-32.2778	-33.6852
4	4026.234	47.63424	2.62e-24	-34.44355	-31.3321	-33.18734
5	4041.799	26.08052	3.58e-24	-34.14233	-30.2798	-32.58289
6	4051.872	16.24502	5.15e-24	-33.79164	-29.1781	-31.92898

\* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

After estimating suitable lag value multivariate Johansen and Juselius cointegration test is carried out to know about long run relationship between remittances and terrorism. Table 3 and 4 shows the results of Trace statistics and Maximum Eigenvalue respectively. The analyses of trace statistic show one cointegrating equation which reveals one long run associationship between remittances and other explanatory variables.

Table 3 Trace Statistics

No. of CE(s)	Eigenvalue	Trace Statistic	Critical Value	Prob.**
None *	0.181733	138.0640	125.6154	0.0070
At most 1	0.113717	92.93660	95.75366	0.0769
At most 2	0.088851	65.77480	69.81889	0.1007
At most 3	0.074190	44.83876	47.85613	0.0934
At most 4	0.061340	27.49435	29.79707	0.0901
At most 5	0.038899	13.25138	15.49471	0.1059
At most 6	0.019036	4.324420	3.841466	0.0376

Trace test indicates 1 Cointegration eqn(s) at the 0.05 level

\* denotes rejection of the hypothesis at the 0.05 level

\*\*MacKinnon-Haug-Michelis (1999) p-values

Table 4 Maximum Eigen Value statistics

No. of CE(s)	Eigenvalue	Max-Eigen Value Statistic	Critical Value	Prob.**
None	0.181733	45.12736	46.23142	0.0654
At most 1	0.113717	27.16180	40.07757	0.6216
At most 2	0.088851	20.93604	33.87687	0.6889
At most 3	0.074190	17.34441	27.58434	0.5505
At most 4	0.061340	14.24297	21.13162	0.3454
At most 5	0.038899	8.926963	14.26460	0.2923
At most 6	0.019036	4.324420	3.841466	0.0376

Max-eigenvalue test indicates no Cointegration at the 0.05level

\* denotes rejection of the hypothesis at the 0.05 level

\*\*MacKinnon-Haug-Michelis (1999) p-values

Table 4 shows the existence of 1 co-integration equation at 5% significant level. Thus there exist long run relationship between terrorism and remittances.

After normalizing the first co-integration vector on remittances, normalized co-integration coefficient were estimated as reported in Table 5.

Table 5 Normalized co-integration equations

$\Delta$ NWR	$\Delta$ GDP	$\Delta$ CPI	$\Delta$ TO	$\Delta$ UM	$\Delta$ ER	$\Delta$ IND
1	-1.813925	-5.375739	0.591384	-0.588742	3.472146	-0.858603
SE	(0.28698)	(2.36560)	(1.26946)	(1.45917)	(2.74745)	(0.30048)

The long run equation is estimated as

$$\Delta W R - 1.813 \Delta G D P - 5.375 \Delta C P I + 0.591 \Delta T O - 0.588 \Delta U M + 3.472 \Delta E R + 0.858 \Delta T I N D$$

The focus of this study is on  $\Delta W R$  as the dependent variable, therefore evaluating the long run impact of  $\Delta G D P$ ,  $\Delta C P I$ ,  $\Delta T O$ , and  $\Delta T I N D$  on workers remittances. The co-integration vector is normalized with respect to  $\Delta W R$ .

Therefore,

$\Delta W R = 1.813 \Delta G D P + 5.375 \Delta C P I - 0.591 \Delta T O + 0.588 \Delta U M - 3.472 \Delta E R + 0.858 \Delta T I N D$
(6.3207) (2.2724) (-0.4658) (0.4034) (-1.2637) (2.8574)

The numbers in parenthesis show t-statistics.

In the long run, terrorism index has significantly positive relationship with remittances. The relation is highly significant. The results are in the line with the empirical evidence of Biglaiser and DeRouen (2007), Aydas, Neyapti and Metin-Ozcan (2003), they added that democratic regime encourage remittances while military regime discourage remittances. On the behalf of host country terrorism is pull factor, which attract more migrants.

Inflation has significant positive relationship with remittances. The result indicates that when inflation increases people tend to move abroad to serve the people thus the flow of remittances into country increases. For the host country inflation is the pull factor while for the home country it is the push factor.

Table 9 Vector Error Correction Model

Error Correction:	CointEq1	Standard error	T-value
D(LNWR)	-0.00688	0.00668	-1.02988
D(LNGDP)	0.021159	0.00852	2.48238
D(LNCPI)	-0.00066	0.00041	-1.59282
D(LNTO)	0.005088	0.00153	3.32218
D(LNUM)	-0.00037	0.00116	-0.31988
D(LNER)	-0.00048	0.00051	-0.93741
D(TIND)	0.02877	0.00672	4.2845

VEC of remittances is shown in table 9. VECM shows the short term disequilibrium in variables and its adjustment in time. In this study we find evidence of short run positive relationship between remittances and terrorism. We also find evidence of short run positive liaison between trade openness and remittance and also economic growth increases remittances inflows positivey in short run. The magnitude of other variables found to be have no effect in short run on remittances.

## 5. Conclusion and Discussion

This study was conducted to find the long run and short run relationship of terrorism with workers remittances in Pakistan. Annual data was used from 1995 to 2013 for this purpose. Terrorism index was used to find the combine impact of terrorism. Terrorism index was the combination of fatalities, deaths and injuries. Johanson cointegration test was used to find the impact of terrorism on remittances over the long run while short run effect has been examined via vector error correction mode. The analyses of cointegration show evidence of significant positive relationship between terrorism and worker's remittances in Pakistan. Similarly short run statistically significant relationship between remittances and terrorism has been confirmed through vector error correction model. The result is according to the pull and push theory. So the results revealed that terrorism is a push factor for Pakistan. It means when terrorism increased in Pakistan, people migrated to foreign countries, thus increased the flow of remittances into Pakistan. Other variables, with market size (GDP) the impact was positive, which indicated the other side of the theory, which is the pull factor. On the other hand with the inflation the impact was positive, which is the push factor, which indicated that when inflation increased in Pakistan the people consumed their income only in their daily basic needs. So inflation tends the people to migrate into foreign country for the better life of their family.

The study has certain limitations. The study only focused light on terrorism but there are also some other factors which impact the flow of remittances, like corruption, political instability, and army interference. Other limitation is the availability of data, most of the remittances are sent through illegal means so to obtain reliable data is mostly difficult for researchers.

## References

1. Adams, R. H. (1998). Remittances, investment and rural assets accumulation in Pakistan. *Economic Developmental Cultural Change*, 47, 155–173.
2. Ahmed, M. A. (1986). Comments on impact of workers' remittances from the middle east on Pakistan's economy: Some selected issues. *The Pakistan Development Review*, 25(4), 783–785.
3. Alper, A. M., & B. Neyapti. (2006). Determinants of workers' remittances: Turkish evidence from high-frequency data. *Eastern European Economics*, 44(5), 91-100
4. Amjad, R. (1986). Impact of workers remittances from the Middle East on Pakistan's economy: Some selected issues. *The Pakistan Development Review* 26.
5. Anwar, & Mughal, A.G. (2013). Migration remittances and living standards in Tajikistan: A report.
6. Aydaş, O. T. (2004). Determinants of workers remittances: The Case of Turkey. M.A. Thesis, Bilkent University, Ankara.
7. Aydaş, S. T., Neyapti, B., & Metin-Ozcan, V. (2004). Determinants of workers remittance: The Case of Turkey. *Bilkent University Department of Economics Discussion Paper*.
8. Burney, N. A. (1987). Workers Remittances from the Middle East and effect on Pakistan's Economy. *The Pakistan Development Review* 26

9. Carlos, V.S., & Huang, P. (2006). Macroeconomic determinants of workers' remittances: Host versus home country's economic conditions. *Journal of International Trade & Economic Development, Taylor and Francis Journals*, 15(1), 81-99.
10. Chami, R. Connel, F. K., & Samir, J. (2003). Are immigrant's remittances flows a source of capital for development? (*IMF Working Paper, WP/03/189*).
11. Chami, R., Cosimano, T., & Gapen, M. (2006). Beware of emigrants bearing gifts: Optimal fiscal and monetary policy in the presence of remittances. *IMF-Working Paper WP/06/61*.
12. Chami, R., Fullenkamp, C., Jahjah, S., (2003). Are immigrant remittance flows a source of capital for development? *IMF-Working Paper WP/03/189*.
13. Chandavarkar, A. G. (1980). "Use of migrants remittances in labor-exporting countries," *finance and development*, 17, 36-39
14. Datta, P. (1998). Migration to India with special reference to Nepali Migration. Unpublished doctoral dissertation. *University of Calcutta, Kolkata, West Bengal, India. Development Economics*, 13(2), 200-214.
15. Elbadawi, I. A., and Rocha, R. (1992). Determinants of Expatriate Workers' Remittances in North Africa and Europe. *Working Paper WPS 1038, Country Economics Department, the World Bank, Washington, DC*.
16. El-Sakka, M.I.T., & McNabb, R. (1999). Macroeconomic determinants of remittances. *World Development*, 27 (8), 1493-1502.
17. Elu, J.U. & Price, G.N. (2011). Do remittances finance terrorism in Sub-Saharan Africa? Unpublished manuscript. *Atlanta, GA: Department of Economics, Morehouse College*.
18. Faini, R. (1994). Workers' remittances and the real exchange rate. A quantitative framework. *J Popul Econ* 7, 235–245
19. Faini, R. (2002). Development, trade and migration. Proceedings from the ABCDE Europe conference.
20. Fayissa B., & Nsiah, C. (2008). The impact of remittances on economic growth and development in Africa. *Department of Economics and Finance, Working paper Series*,
21. Glytsos, N. (1988). Remittances in Temporary Migration: A Theoretical Mode and its Testing with the Greek-German Experience. *WeltwirtschaftlichesArchiv*, 124, 524-548.
22. Glytsos, N., & Katselli, L. (1986). Theoretical and Empirical Determinants of International Labor Mobility: A Greek-German Perspective. *Center for Economic Policy Research, Discussion Paper Series No.148*.
23. Habib, Md., & R., Nourin, S. (2006). Remittances and real investment: an appraisal on South and South East Asian economies. *Faculty of Economics, Chulalongkorn University, Asian Institute of Technology, Bangkok*
24. Khathlan, A. K. (2012). The Link between Remittances and Economic Growth in Pakistan: A boon to economic stability. *Science Domain International*. 2(3), 167-187
25. Ratha, D. (2003). Workers' remittances: an important and stable source of external development finance. In *Global Development Finance 2003*, edited by World Bank. *Washington, DC: World Bank*, 157–175
26. Russell, S. S. (1986). Remittances from international migration: A Review in Perspective, *World Development* 14, 677-696.
27. Sattar, A., & Iqbal, Z. (2005). The contribution of workers remittances to economic growth in Pakistan. *Pakistan Institute of Development Economics, Islamabad*. (PIDE Research Report No. 187).

28. South Asia Terrorism Portal (2013). Data accessed on August 02, 2013 from: [http://www.satp.org/State Bank of Pakistan](http://www.satp.org/State%20Bank%20of%20Pakistan). (2013). Country-Wise Workers' Remittances. <http://www.sbp.org.pk/ecodata/index2.asp>
29. Straubhaar, T. (1986). The determinants of workers' remittances: The case of Turkey. *WeltwirtschaftlichesArchiv*122, 728-740.
30. Swamy, G. (1981). International migrant workers' remittances: issues and prospects. Staff Working Paper No.481, The World Bank, Washington, DC.
31. Wahba, S. 1991. What determines workers' remittances? *Finance and Development*28 (4), 41-44.
32. World Bank (2012). Migration and remittances, Fact book 2012. *World Bank Group*.
33. Zahid, F. M. (2009). Impact of war in Swat valley on farming sector. *AIRRA*.