

The Impact of Terrorism on Exchange Rate: Case of Pakistan

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Abstract:

The issue that as terrorism affects exchange rate in Pakistan, gain popularity and became a debatable discussion globally, in this research endeavor, we used time series data for the period 2000-2016, by using Auto regressive distributed lag (ARDL) technique for empirical estimation and using Augmented ducky fuller (ADF) test for measuring unit root, at theoretical level there are negative relationship between terrorism and exchange rate, the empirically findings also suggest that terrorism has a negative effects on exchange rate in Pakistan. The terrorist attacks squeeze the production level, exports, and hence adversely affects the exchange rate in the country. This study provides significant implication for the government to solve this issue and also to enhance economic development which essential to stabilize the exchange rate.

Key words: Exchange rate, Terrorism, Export, Remittances

1. INTRODUCTION

This paper investigates the relationship between terrorism and exchange rate in Pakistan. Terrorism affected many countries after the incidence 9/11 seriously and became debatable issue among the researcher further has great consequences for a poor

economy as Pakistan. Terrorism affected every sector of the economy from social sector to infrastructure sector. The infrastructure of the country badly affected by flow of terrorist activities as a result economic activities slow down (Ali, 2010). Pakistan being on front line state thereby to ally of US against war on terror and got grave consequences in war on terror in almost all sectors including agriculture, business, industrial, tourism, hoteling, manufacturing, transportation, trade and exchange rate besides these, investors and community also affected by terrorist activities and disturbed their confidence as a result they stop their further investment in the country (Gul et al 2008).

The incidence of 9/11 brought a great sudden change in geopolitical condition and socio economics in the world (Michael 2007). Since this event, terrorism became a burning and most debated discussion in the world and most of the countries effected with this issue but unfortunately Pakistan adversely effected a lot because when America started war against Al.Qaida in Afghanistan then unfortunately activist transferred to Pakistan due to its geographical location with Afghanistan and involved Ceaseless terrorist happenings in Pakistan. (ullah a 2017)

It is reflected that money market stock market and forex market are highly significance for policy implication and for development .any interruption can be deteriorated its smooth functions of the markets which further might lead affected overall government economic policies. Stock market is considered one of the most vital and barometer for healthy development of a country, the ongoing terrorism incidences have been highly affected all the markets and slow down financial activates as results firms started to sell their bond and financial assets (Karolyi ,2006)

There are three stock markets in Pakistan which appositively responded by terrorist events and made sharp fall financial business such as dealing of shares securities bonds

and debentures further excessive fluctuation lost the tendency of investors for new mega projects.

There are three main causative theories of terrorism explained by ROSS in 1993, rational theory, psychological theory and structural theory. Rational theory refers that the terrorist activities for the purpose to get loss and benefits and motivates individual for that act. Structural idea of terrorism indicates that terrorism will occur on bases of the differences of the basic unite of entity like political social, environmental, religious and economic structures. Psychological theory elaborates that why people join the terrorist group and what is the motive behind it. The structural theory of terrorism is most commonly causative factor of terrorism and especially use for political and ideological purpose (Orr 2015). It is extended that there are two kinds of terrorist activates, discriminate war and discriminate war, by discriminate war terrorists just target military forces and other governed bodies while indiscriminate war make no difference between civilian and military forces ,terrorist group generally fight indiscriminate war for the purpose to spread their ideological objective and political agenda ,liqueur 1996,O'brien1996.

Further this paper have six parts, second part of this include past literature, third part shows hypothesis of the study, fourth part is methodology, fifth part include result and discussion of the paper while final part shows conclusion and policy recommendations.

2. LITERATURE REVIEW

A large number of studies have been undertaken to examine the effect of various terrorism attacks on exchange rate of Pakistan. The issue of terrorism has received great attention of the academic researchers, international organizations and institutions. The majority of the researchers found a significant relationship between terrorism and exchange rate. Terrorism effects on economic activities especially on exchange rate in

Pakistan gained popularity since two decades The researchers and financial experts presenting different ideas and theories about the effect of terrorism on exchange rate. Majority of researcher found negative association of Terrorism with exchange rate in different regions and countries.

Chesny et al., (2010) investigated the impact of terrorism on financial market in twenty five countries for eleven years. They used different econometric and non-econometric approaches and found that terrorism affects financial market negatively. They further proved that the effects of terrorism on financial markets on Swiss significantly negative while in United States financial markets effect recorded less than Swiss. The study explain that banking sector affects more compare with other sector like industrial sector. Eldor & Melnick (2004) analyzed the impact of suicide attacks on exchange markets of Israel from 1990 to 2003 and found that Suicide attacks had a permanent effect on both the stock and foreign exchange market, as did the numbers of victims, while location of a terror attack had no effect on either market. Markets did not become desensitized to terror. Financial markets continued to function efficiently; past market liberalization policies ostensibly contribute to coping with the terror. Christos et al., (2010) studied the effects of two terrorist attacks of London (Madrid) in 2004 and 2005 and found that Significant negative abnormal returns are widespread across the majority of sectors in the Spanish markets but not so in the case of London. The effects of such kind of attacks not only limited to a certain or single financial market but it affects all the chain of connected markets. Mehmet et al., (2017) examined various terror attacks effects on dollar pound exchange rate, they found that terror attacks mainly affect the lower and upper quintile's of the conditional distribution of exchange-rate returns, while miss specified (due to nonlinearity and structural breaks) linear Granger causality test show no evidence of predictability. Terror attacks also affect almost all quintile's of the conditional distribution of exchange-rate

volatility (except the extreme upper-end), with the significance of the effect being particularly strong for the lower quintile's. Tayyeba et al., (2012) investigated the impact of terrorist attacks on financial market in Pakistan for the time of 2006 to 2008 and found that that the terrorist activities adversely affect the financial markets under study but the significance varies for different markets. It also found the extent and direction of relationship between the terrorist activities and three financial markets of Pakistan, which are the Karachi Stock Exchange, the FOREX market and the interbank market. After collection of the primary data for the terrorist activities on daily basis and the secondary data on the indicators of the three markets, by using the OLS model it attempts to quantify the impacts of various types of terrorists' activities on financial markets. The effects of such kind of terrorist activities on financial market in Pakistan since after 9/11 accident increased and crashed the Karachi, Lahore and Islamabad stock exchange which indirectly damaged the economic activities in the country.

Claude and Esteban (2005) indicated that terrorism has a significant negative impact on non-defense-related companies, the overall effect of terrorism on defense and security-related companies is significantly positive. Uses scoring matching techniques and event study analysis to elucidate the impact of terrorism across different economic sectors in Israel Similarly, using panel data on countries' defense expenditures and imports from Israel, they found that terror fatalities in Israel have a positive effect on Israeli exports of defense products.

Abadie and Gardeazabal (2003) recommended that terrorist attack has a negative impact on the exchange rate in both the short-run and long-run. The impact of terrorist attacks on exchange rate is estimated. Particularly, the study focuses on terrorist attacks in Turkey and its implication on Turkish lira versus pound sterling exchange rate. In order to find the causal effect, the study employed Autoregressive distributive lag (ARDL) bound testing technique and found short and long run nexus between these two variables.

Ali A(2010). It is analyzed that Terrorism is currently challenging issue in the world and happening in different appearance. Terrorism is emerging from different areas and countries in the world while have close relationship each other and have proper arrangement of recruitment and training set up .Terrorism severely affected almost all sectors of Pakistan such as economic proses political system and social setup international trade FDI ,Exchange markets and the loss of precious humans lives .thus terrorism not only discouraged business activities ,create uncertainty among the people and owing to suffered round about 30 -40 billion (Ali.A 2010). It is analyzed to attract foreign investor for investment and mega project needs soft image of the country it is like a cashable commodities, while the numbers terrorist activities in Pakistan lead decline FDI at 58.5 in first quarter like from\$ 1.16billion to \$463 billion. The huge defense expenditures due the terrorism, affected the economy especially investment and GDP (Ali 2008). The exchange rate and terrorism have multi-dimensional effect .it severely affected exports , the insurgency situation every sectors of economics is not working effety that's why production fell down and remained production are used in domestic markets .on such condition private investment and govt capital formation feel down and increased budget deficit for maintaining line order situation ,human cost and sustain social activities and exports declined annually \$ 6 billion as result negatively affected exchange rate (Ali, A 2010).

Gulley and Jahangir (2006) they employed “Generalised Autoregressive Conditional Heteroscastasticity (GARCH) Model” to study the impact of terror attacks on the return and volatility of the financial markets of the sample area, They found negative relation with increasing terrorist activities on the stock market and make lowered bond market yields . Terrorist attacks had not been found associated with additional volatility in stock market in the given set of countries under

observation. Liquidity of the foreign exchange market is significantly higher than other markets.

Hashmi (2007) stated that war on terror has adverse implication and effects Pakistan economy in manifold ways. After 9/11 European guide for travelers reduces the number of tourists to Pakistan and besides this most investors and foreign traders are diverted their business to Singapore and India. The world Economic forum that out of 130 tourist countries the number of Pakistan was 113 in 2009 the rank is connected with frequent incidents of terrorism which is significantly reduced exchange rate. Abadie and Gardeazabal (2008) it is analyzed the impact of terrorism on world economy and used simple economic model. It is found that terrorism adversely affected financial and macroeconomic variables.

3. HYPOTHESIS OF THE STUDY

This paper makes a set of two testable hypotheses:

H1: There is negative relationship between exchange rate and terrorism.

H2: There is a causal link between the exchange rate and terrorism.

4. METHODOLOGY AND DATA SOURCES

4.1 Data Sources:

The legitimacy of results depends on consistent and sufficient data. Time series data is used for analysis and for the period 2000 to 2016 in case of Pakistan.

The data collected for the research study from the following sources.

- 1 World Bank Data source
- 2 Pakistan Economic Survey
- 3 Global terrorism

4.2 Model and Research Methodology:

This study is used the following model for the empirical estimations of terrorism and an exchange rate,

$$EX_t = \beta_0 + \beta_1 EX_{t-1} + \beta_2 TR_{t-1} + \beta_3 RMTG_{t-1} + \beta_4 EXP_{t-1} + U_t \dots \dots \dots (1)$$

Where,

Ex shows exchange rate

EX-1 indicates lag value and taken as independent variable

TR(-1) depict lag value terrorism

RMTG(-1) shows lag value remittances

EXP(-1) indicates lag value of exports

U_t shows error term

Theoretically stated that there is negative expected sign between EX and TR, because it has been proved through past literature that exchange has negative relationship with TR, in time series most of the stationary properties are checked in order to know the order of integration . Stationary is highly desirable for regression analysis while non- stationary data may lead misleading result for estimation. To measure stationary we use unit root analysis through Dickey -Fuller and Augmented Dickey –Fuller (1981), both can be used for analysis but ADF widely can be used for estimation.

We can check it with two ways when the p value is less than 5% then Accept H₀ or When the absolute critical value is greater than statistical value accept H₀ meaning that data is not stationary at level and vice versa , Before estimation all variables are converted into lag form for data smoothing.

5. RESULTS AND DISCUSSION

Table-1
ADF Unite root test:*

Variables	At level*	At First Difference*	conclusion	order of integration	Prob
LNEX	-1.44241 (-2.59062)	-8.000724 (-2.59062) *	Non stationary at level Stationary at first difference	I(1)	0.0000
LNEXP	-2.284820 (-2.284840)	-8.186644 (-.3.479367) *	Non stationary at level Stationary at first difference	I(1)	0.0385
LNREM	-3.015379 (-2.905519)		Stationary at first difference	I(0)	0.0000
LNTR	-2.28483 (-2.539026)	-8.005208 (-2.906210) *	Non stationary at level Stationary at first difference	I(1)	0.0000

* Parenthesis show critical values for the respective statistics

ADF unite root depicted that Exchange rate , Export and Terrorism were non stationary at level when it converted into first different then it became stationary while Foreign remittances is stationary at level ,Order of integration 1,1,1 and the P value is less than 0.05 .which exhibits the possibility to run ARDL.

ARDL model results

Dependent Variable: LNXR

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LNXR(-1)	0.897497	0.043750	20.51429	0.0000
LNTER(-1)	-0.636126	0.106054	-5.998149	0.0000
LNREMG(-1)	0.163203	0.096860	1.684930	0.0973
LNEXP(-1)	0.477488	0.100599	4.746450	0.0000
C	0.568356	0.358962	1.583331	0.1187
R-squared	0.972142	Mean dependent var		4.292272
Adjusted R-squared	0.968837	S.D. dependent var		0.222417
S.E. of regression	0.039263	Akaike info criterion		-3.525404
Sum squared resid	0.090955	Schwarz criterion		-3.262157
Log likelihood	126.1010	Hannan-Quinn criter.		-3.421236
F-statistic	294.1291	Durbin-Watson stat		2.267095
Prob(F-statistic)	0.000000			

As the integration level of the variables included in the mode is mixed i.e. 1(1) and 1(0) so the technique of ARDL is suitable for estimation .There is one variables stationary at level while three variables are at first different. We call it dynamic model because the dependent lag variable has become independent due to lag value.

We have taken exchange rate as dependent variable while exchange rate as lag value foreign remittance, export and terrorism as independent variables, for estimation applied ARDL, So we have found the result that most variables have positively correlated with exchange rate except terrorism and significantly effected exchange rate .we can see from the model As the lag value of dependent variable i.e exchange rate (as lag value) is positive and significant effect on exchange rate .It means that the value of exchange rate is also dependent on its lag value .its magnitude shows that one percent increase lag exchange rate it expand exchange rate .89% which reveals highly significant .while terrorism has negatively and significantly effected exchange rate. The model exhibits that one percent terrorism rise it reduces exchange rate 0.63%, and P Value .000 which imply highly significantly at 10%.

The foreign remittance have positive and significantly correlated with exchange rate. Its magnitude imply that as one percent increases foreign remittance it boost up exchange rate by 0.16 .while the p value of exchange rate .097 is less than 10% which leads significantly impact on exchange rate .Export also play key role on variation of exchange rate further it has positive and significantly associated with exchange rate . As 1% increase export it enhanced exchange rate by 0 .47 .moreover all the positive sign and significantly related variables imply divergence possessions while natively sign and significant refers convergence properties. Moreover our R-Square is 0.97 and Durbin Watson 2.26. The Durbin Watson is greater than R square which shows that the model is good one. Durban Watson 2.26 which imply that no serial correlation.

6. CONCLUSION

This paper investigated the impact of terrorism on exchange rate in Pakistan for the period of 2000 -2016. Empirical findings and theoretical literatures disclose that terrorism has negatively affected exchange rate. ADF test has been used to measure unit root and ARDL technique used for model estimation. Our empirical results suggest that export is positively correlated with exchange rate in Pakistan. Foreign remittance played significant role in appreciating currency rate and stimulated exchange rate, further it is investigated that terrorism negatively associated with exchange rate while the lag value of exchange rate has positively affects exchange rate. Terrorism had not been only negatively affected all economic sectors from 2000 to 2016 but also affected social behavior of the people and confidence of foreign investors; all these have significant impact on exchange rate. Foreigner investors and tourist which consider the main sources of exchange rate are negatively affected by terrorist activities and as result the more favorable Economic activities become more complex. Terrorism

is not a single problem of Pakistan but it's a global problem which affected most countries exchange rates. Terrorism can be tackled when governments take positive steps to advance economically and socially affected areas by different incentives such as boosting infrastructure developments, providing jobs opportunities, setup industries and implement effective law and order situation.

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