

Terrorism - workers' remittances nexus: empirical evidence from Turkey

Yılmaz Onur ARI*, Ibrahim BELLO**

Abstract

The paper examines the impacts of remittances on terrorism for Turkish economy by using annual time series data covering the period of 1990-2019. Autoregressive Distributed Lag (ARDL) was used in the application of econometric method. To ensure robustness of results, the study accounts for structural breaks in the unit root test and the co-integration analysis. The results obtained indicated that remittances flows to Turkey have a positive and significant effect on terrorism. This is in line with the empirical evidence that finances through remittances can promote terrorism in a country. The study also concludes that unemployment has strong a correlation in promoting terrorism in Turkish economy and that persistent unemployment can cause economic inequality, poverty, social dislocation, unrest, and conflict such as terrorism, which has a negative impact on subsequent long-run economic growth. Besides, trade openness shows a negative but significant effect, which indicates that trade openness has a little influence in promoting terrorism.

Keywords: remittances, terrorism, Turkish economy, economic growth, unemployment

Introduction

Remittances are defined as personal transfers (cash and in-kind) and compensations (income from border, seasonal and other short-term works) sent to their home countries by migrants who live and work in developed countries (Kumar *et al.*, 2017). Today, remittances are recognized as one of the most important sources of global development finance (Majumder and Donghui, 2016). Besides, remittances are one of the less volatile sources of foreign exchange earnings for developing countries (Ratha and Sirkeci, 2010). Workers' remittances flows to underdeveloped and developing countries are expected to reach \$ 551 billion at the end of 2019 and

* Yılmaz Onur ARI is PhD, Assistant Professor at the Bayburt University, Turkey; e-mail: onurari@bayburt.edu.tr.

** Ibrahim BELLO is PhD, Assistant Lecturer at the Federal University of Kashere, Gombe, Nigeria; e-mail: ibrahimbello102@gmail.com.

about \$ 600 billion in 2021 (World Bank, 2019). At this point, in growth theories, migration flows are considered a powerful engine in shaping economic growth and the cross-border mobility of the workforce. It is observed that it creates bilateral effects, both economically and socially, in both migrant receiving countries and sending countries. In particular, the effects differ depending on the diversity of resources. The degree of this effect varies depending on the labour force quality of the receiving and sending countries. Demographic and educational factors in the context of migration play a key role in measuring the contribution of migrants to growth by labour force or in evaluating whether migration has a positive effect on income growth per capita. On the one hand, if the receiving country attracts qualified workforce, it creates positive effects on economic growth; on the other hand, it contributes to the economies of the sending countries through foreign exchange income (Borjas, 1994; Gupta and Chakraborty, 2006; Boubtane *et al.*, 2014). However, remittances also target people in need and may therefore be used for consumption and the purchase of imported products. In such cases, their impact on the economic development of recipient developing countries may be insignificant or even negative (Piteli *et al.*, 2019).

Different researchers have found different determinants of remittances. Wahba (1991) specified different determinants of remittances; they found that the black market premium and interest rate differentials have a significant impact on remittances in flows. According to Sakka and McNabb (1999), the major determinants are: the income level, the level of interest differential, the black market and the official exchange rate differential of both sending and receiving countries. Niimi *et al.* (2009) concluded that the education of migrants has a well-defined positive impact on the level of remittances inflows in Vietnam. Aydas *et al.* (2005) indicated that home and host country incomes, black market, interest rates differentials, growth, inflation and periods of military regimes significantly affect remittance flows to Turkey. Hagen-Zanker and Siegel (2007) revealed that self-provided insurance and bequest motives are important determinants of remittance inflows in Albania. For Moldova, the authors found significant results for the loan repayment motive with regard to the repayment of migration loans. They also stated that humanistic manners and emotions, such as altruism, are important determinants of remittances. Havolli (2009) found that the business environment and the duration of stay play a significant role in the amount remitted for Kosovo, a young Balkan country. Finally, according to the results of their survey among Romanian international migrants, Goschin and Roman (2012) observed that remittances are strongly affected by migrants' income, return intention and presence of the spouse for Romania.

Terrorism typically creates uncertainty and economic deterioration in the business environment; therefore, it is possible to expect money and asset outflow from countries exposed to terror incidents (Onanuga *et al.*, 2020). Among all, remittances play a crucial role in improving the economic performance of the economy but, at the same time, they are considered to be one of the major sources of

terrorism funding (Raza *et al.*, 2017). Terrorism may not thrive without the financial support of some unidentified illegal or undisclosed official sources.

There are two basic types of remittances transfers. These are formal and informal ways of transfer. Formal transfers are controlled and regulated by the state and manifest themselves as actual remittances in actual statistics. Electronic money, bank accounts and card transfers can be listed here (Přivara, 2019). Despite some advantages made possible through electronic money transactions, evidence shows that some critical obstacles hamper innovative technology mechanisms. Criminal activities like fraud, money-laundering and financing of terrorism create challenges for both remittances users and policymakers (European Parliament, 2014). Phillips and McDermid (2020) assert that non-bank companies offering financial services through new technology may cause delays or stickiness in adaptation to new conditions and may provide openings for counter-terrorist finance because these systems changed the risk structure of international funds transfers like remittances. The second type consists in informal transfers of remittances. This is important because informal transfers cover a significant share of total remittances in some parts of the world. This popularity of informal channels usually depends on their potential economy, rapidity, convenience and secrecy (Akhter and Islam, 2019). There is also a possibility that informal channels can be used to finance terrorist activities (Přivara, 2019).

Turkish international labour emigration movements first started towards Western European countries, especially Germany, in 1961. In the following years, migrations occurred with guest worker agreements signed with other Western Europe and Scandinavian countries. Due to the economic recession in Western European countries in the 1970s, guest worker agreements started to be terminated. However, the termination of guest agreements could not prevent the migration of Turks to Europe, and migration continued at an increasing rate due to the marriage of family members in the 1990s (Koçak and Terzi, 2012).

In addition to the problems caused by the geographical and socio-economic problems in the region, concerns about terrorist incidents in the region have been the basis of the social mobility in Eastern and South-eastern Anatolia regions in Turkey. Employment in the industrial and trade sectors is low in Eastern and South-eastern Anatolia. Therefore, open and hidden unemployment in the region is high. The social mobility in the region increased in the 1980s, when fear of terrorism due to Kurdish Terrorist Organization (PKK) was added. Local people moved to big cities in Western Turkey or emigrated to Europe (Sevim, 2009). Since 2010s, Turkey has been fighting against other terrorist groups like ISIS, Parallel State Structure (FETO/PSS) as well as PKK (Department of Justice, 2017).

Since terrorists' attacks are tightly linked to geopolitical events, many studies empirically investigated the impact of terrorism on capital flows in this regard (Rajput *et al.*, 2019). As a contribution to the literature, our paper will analyse the linkage between terrorism and workers' remittances in Turkey. Due to some

geopolitical risks, Turkey faces the threats of terrorist groups from the Middle-East and Caucasia and therefore has some problems especially with neighbour countries - Syria, Iraq, Iran and Armenia. Besides, Turkey's inner conflicts related with the socio-economic reasons such as economic inequality, poverty and unemployment, create ethnic terrorism in its eastern regions. Thus, these issues have to be investigated in order to outline Turkey's remittances perspective. The objectives of this study are to find the long term relationship between terrorism and remittances inflows in Turkey and to find out whether terrorism can be a determinant of the remittances. In addition, the impacts of supportive variables on terrorism in the model, namely unemployment and trade openness, will be examined. In this context, this paper tries to make policy recommendations based on the empirical findings of the study.

The remainder part of the paper is organized as follows: Section 1 reviews the literature about the relationship between terrorism and workers' remittances. Section 2 discusses the methodology, including sources of data, model specification and tools of analysis. Sections 3 presents' empirical findings and results from remittances-terrorism nexus in Turkey and section 4 draws conclusions and makes policy recommendations.

1. Literature review

The theoretical background of the terrorism-remittances nexus has its roots in two models. Each model focuses on the specific factors and networks through which terrorism disturbs the economic conditions. Eckstein and Tsiddon (2004), revealed the first model, which is known as a closed economy because it hypothesizes the total discount rate in order to understand the decline in macroeconomic factors and income of the countries. The other model, which was found by Abadie and Gardeazabal (2008), referred to as AG (2008), is known as an open economy model and hypothesizes capital outflow to interpret the impact of macroeconomic variables on countries.

There are few empirical studies on the interactive effects between terrorism and remittances and these are hardly mentioned in the literature. Among them, Elu and Price (2011) provided evidence that remittances financed terrorism in the sub-Saharan Africa region in the 1970s and 2006. They asserted that each million dollars of workers' remittances went to finance about one terrorist incident. Mascarenhas and Sandler (2014) made the first global investigation of the relationship between terrorism and remittances. They employed four dependent variables regarding various measures of terrorist attacks, and for each of these dependent variables, they ran numerous Negative Binomial Panel Regression Models, including some that accounted for the possible endogeneity of remittances and foreign aid. They found that remittances have a positive and significant impact on the various terrorism measures. Mughal and Anwar (2015) examined the short-run behaviour of migrant

remittances in the face of terrorism by using monthly data for post 9/11 terrorist attacks in Pakistan. According to ARMAX models applied, the results showed that there is a highly significant and positive nexus between terrorism and remittances. The positive association holds for all the top five migrant-hosting countries (USA, Saudi Arabia, United Arab Emirates, United Kingdom and Kuwait) of Pakistan. The findings point in favour of an altruistic behaviour of migrants' remittances at the macroeconomic level. Zada *et al.* (2016) investigated the short and long run impact of terrorism on foreign remittances in Pakistan by employing annual time series data from 1995 to 2014. The long and short run relationship is tested by using Johansen and Juselius cointegration analysis. The results showed that there is a significant positive effect of terrorism on remittances but an insignificant effect of unemployment, market size and trade openness on remittances. According to the study, an increase in terrorism compels workers to go abroad, in a safe country and earn their income there. Raza *et al.* (2017) examined the effect of remittances on terrorism in 5 South Asian countries. The panel data covering 20 years from the period of 1994 to 2013 is used. They found that the workers' remittances have a significant positive impact on the terrorism in South Asian countries.

The results also indicate that the control variables, inflation, unemployment and population size also have a significant positive relationship with terrorism. Kratou and Yogo (2017) tested the short run nexus between remittances and terrorism by using a Panel VAR model and observing the data from Global Terrorism Database on a sample of 108 developed and developing countries over the period 1970-2014. They opined that remittances cause terrorism in Sub-Saharan Africa, while terrorism Granger causes remittances in MENA region and Central America. Okafor and Piesse (2018) examined the determinants of terrorism in the countries that are in the top category of the Fragile States Index (FSI) and are also prone to terrorism. They used a panel data for 38 countries mainly from Sub-Saharan Africa, the Middle East, North Africa and South Asia for the years 2005-2014. The results showed that the number of refugees and youth unemployment have a positive and significant impacts on terrorism. Military spending is positive but less robust across models. Conversely, FDI and remittances have a negative impact on terrorism. Finally, they concluded that governance and foreign aid are negative and insignificantly related to terrorism. Yoshino *et al.* (2019) investigated the determinants of international remittances in 12 Asia and Pacific migrant-sending middle income countries by employing a panel data analysis technique. They found that per capita GDP growth and net FDI inflows are negatively correlated with remittance inflows in middle-income countries. As middle-income economies develop because of the growth of their domestic industries and development of their economies, the amount of FDI as foreign capital can be expanded instead of remittance inflows. Moreover, the results showed that political stability is also negatively correlated with remittance inflows. That means the higher the risk of terrorism, war, lack of social freedom, lack of democracy and political volatility, the

higher the possibility that people live and work abroad and remit a part of their earnings to their families in the country of origin. Batu (2019) offered some new empirical evidence on the impact of remittance flows on conflict incidence, onset, and duration in recipient countries. He developed a micro-based model of conflict and the model showed that remittances can raise the opportunity cost of participation in conflicts which can lead to a reduction in both the number of rebels and force used by the government. Finally, Onanuga *et al.* (2020) employed the Pooled Mean Group (PMG) estimation procedure for 10 African countries from 1986 until 2017 and found the long-run negative relationship among the increase in the number of terror incidents on foreign direct investment, remittances inflow and portfolio investment. They found that military expenditure is positive and statistically significant for all indices of financial flow (FDI, remittances and portfolio investment) in Africa.

There is continuous research on the determinants of migration movements. Some past studies in the literature regarding Turkish migration (Şimşek, 2007; Sirkeci and Cohen, 2016; Dücan, 2016) emphasized the impact of terrorism on migration patterns in terms of number of migrant outflows in an empirical or theoretical context. This study was designed to fill in the gap in the available literature on the possible outcomes of migration in terms of terrorist activities in Turkey. In this sense, remittances are a crucial outcome of migration activities. Thus, this study aims to make an assessment through handling the issue from an economic perspective. Besides, it will be a guide for future studies in terms of checking whether remittances have an impact on terrorism in Turkey or not.

2. Data and methodology

2.1. Data source

In this study, time series yearly data covering the period 1990-2019 generated from World Economy Index (2017), www.globaleconomy.com, is used. The dependent variable is terrorism (Ter) and the independent variables are: remittances (Rem), unemployment (unem), trade openness (TOP). The study chooses Turkey as a sample among the other Balkan countries such as Greece, Romania, Serbia, Croatia, Bosnia etc. due to the uniqueness and relevance of Turkey's economy compared to those countries.

2.2. Model specification

Many scholars consider remittances the revenue through which foreign countries undertake investment in host countries - which manifests itself as a route of income into a country. Moreso, incorporating the remittances into the model as a control variable significantly helps in clarifying the nexus between terrorism and remittances, according to Jude's study (Jude, 2017). The economic model is vital in

model specification because it gives a partial relationship between the regressand and regressors in a precise manner as expressed in Equation 1:

$$Ter = F(Re m, Unem, TOP, e_t) \quad (1)$$

Where

Ter = Terrorism

Unem= Unemployment

TOP = Trade Openness

e_t = Error Term

The model in equation (1) can be transformed into the econometrics model as expressed in equation 2:

$$\ln Ter_t = \beta_0 + \beta_1 \ln Ter_t + \beta_2 \ln Re m_t + \beta_3 + \ln Unem_t + \beta_4 \ln TOP_t + e_t \quad (2)$$

β_0 is the coefficient of the lagged-dependent variable which shows the overall adjustment of terrorism. β_1 ----- β_4 are coefficients of the explanatory variables expressed in logarithm, while Ter, Unem, Top remained as previously defined.

2.3. Justification for the variables used

It is important to select the independent variables that can fully explain the behaviour of the dependent variable in the model by careful selection in order to avoid misspecification, which is in line with the manner in which such variables were selected. Above all, with the issue of terrorism, it is paramount to incorporate such variables which are widely used in this type of analysis. Remittances were selected due to their relevance in the literature because statistics shows that remittances to developing countries are estimated to have reached \$372 billion in 2011 and to have thus exceeded official development assistance (ODA). Remittances are beginning to rival foreign direct investment (FDI) as a financial inflow (World Bank, 2019). In the same vein, unemployment is one of the macroeconomic variables that can promote negative economic growth and which can equally have a significant effect on influencing terrorism all over the world; for this reason, it was selected. According to Alotaibi and Mishra (2014), trade openness is the sum of imports and exports normalized by GDP. The greater the strictness by authorities in controlling the activities of trade between borders, the greater the illegal trading which, at the same point, promotes terrorism as mentioned by Ratha and Sirkeci (2010); Kumar *et al.*, (2017).

2.4. Estimation strategy

The unit root test

It has been well reported in empirical literature that no meaningful econometric analysis can be accomplished by using time series data without accurately checking for the unit root series of the variables. In reality, it is the unit root pattern of the variables that would, to a large extent, determine the appropriate techniques to be applied in data analysis. There are numerous techniques for the determination of stationarity of time series data but, for the purpose of this study, the Augmented Dickey–Fuller test developed by Dickey and Fuller (1981) and the Philips–Perron test proposed by Philips and Perron (1988) are applied because they are the most common and simple among all other techniques. Besides that, they are also robust and have the capacity to remove autocorrelation from the model. Moreover, in order to make the study more robust, it is important to consider the structural break that may occur within the period which can help to provide a clear picture on how the shocks disturbed the process.

In order to determine whether the series are stationary or not, the augmented Dickey-Fuller (ADF) test, Phillips-Perron (PP), and the Kwiatkowski-Phillips-Schmidt-Shin (KPSS) unit root tests are mostly adopted in the literature; however, they are criticized as they do not take structural break into consideration. Nevertheless, there is consensus that in traditional unit root hypotheses, the shocks are temporary and do not change the route of the series in the long-run. But, for this study to be more robust, it is imperative to determine the breaks that occur within the time frame. Thus, depending on the break and whether the break is internal or external, different methods have been developed and consequently used very often in empirical application. In this study, the Bai-Perron (BP) structural break test was used, which is because of its ability to determine more than one structural break in the time series model. Consider a standard multiple linear regression with T observations and M potential breakpoints and $M + 1$ potential regimes. For regimes $j = 0, m$, define $T_j \in [T]_m$ to be the first date of each regime. Then, for the j^{th} regime, i.e the subsample $T_j \dots \dots \dots T_{j+1} - 1$ we have;

$$Y_t = X_t^1 \beta + Z_t^1 \gamma_j + \varepsilon_t \quad (3)$$

The co-integration technique

In addition, the study applied the autoregressive distributive lag (ARDL) model approach to cointegration, popularized by Pesaran and Shin (1995), Pesaran and Smith (1997) and Pesaran, Shin and Smith (2001). This approach is chosen over

other approaches because of its several advantages. First, the ARDL approach can be applied without taking into account whether the explained variables are I(1) or I(0). This implies that the combination of I(1) and I(0) or mutually co-integrated are possible by using the ARDL approach. Second, it yields unbiased estimates in regression analysis and can be applied on small sample data while the Johansen co-integration requires large sample data for validity. Third, the ARDL approach to co-integration enables the estimation by using the ordinary least squares method once the lag of the model is identified. Furthermore, Tang (2006) stresses that the ARDL approach is also applicable when the explanatory variables are endogenous and that it has power to correct for serial correlation. Finally, the ARDL approach allows the estimation of different variables with dissimilar optimal number of lags.

According to Pesaran and Smith (1997), the ARDL approach to co-integration requires the following two steps: First, to determine the existence of any long-run relationship among the variable of interest by using the F-test. Second, to estimate the coefficients of the long-run relationship and determine their respective values, followed by the estimation of the short-run parameters of the variables with the aid of error correction representation of the ARDL model.

The first step in the ARDL approach is to estimate the conditional ARDL which is specified for Model 1 and expressed in the following equation as:

$$\begin{aligned} \Delta \ln T er_t = & \beta_0 + \beta_1 \ln T er_{t-1} + \beta_2 \ln Re m_{t-1} + \beta_3 \ln U nem_{t-1} \\ & + \beta_4 \ln T OP_{t-1} + \sum_{i=1}^p \theta_{i1} \Delta \ln T er_{t-1} + \sum_{i=1}^p \theta_{i2} \Delta \ln Re m_{t-1} \\ & + \sum_{i=1}^p \theta_{i3} \Delta \ln U nem_{t-1} + \sum_{i=1}^p \theta_{i4} \Delta \ln T OP_{t-1} + e_t \end{aligned} \quad (4)$$

where β_0 is the drift component, e_t is the stochastic error term, Δ is the first difference operator, the parameters β_0 to β_4 denote the long-run parameters, while θ_{i1} to θ_{i4} represent short-run parameters of the model to be estimated through the error correction framework of ARDL. $\ln Ter$ is the natural log of total terrorism, $\ln Ter$ is the natural log of terrorism, $\ln Rem$ is the natural log of remittances, $\ln Unem$ is the natural log of unemployment, $\ln TOP$ is the natural log of trade openness, ρ is the optimal lag length.

After that, we can equally apply equation (4) to estimate the hypothesis that there is no co-integration relationship among the variables against the alternative hypothesis that there is a long-run relationship between the variables. This is specified as:

$$H_0 : \beta_1 = \beta_2 = \beta_3 = \beta_4 = 0$$

$$H1 : \beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq 0$$

$\beta_1 - \beta_4$ remain as previously defined.

Moreover, it is imperative to look at the short and long- run coefficients of the variables in order to determine their behaviours in relation to terrorism as mentioned by Jibir and Aluthge (2019). To generate the long- run coefficient, equation (3) described in the following equation as:

$$\ln T er_t = \beta_0 + \sum_{i=0}^p \beta_1 \ln T er_{t-1} + \sum_{i=1}^{p_1} \beta_2 Re m_{t-1} + \sum_{i=1}^{p_2} \beta_3 \ln U nem_{t-1} + \sum_{i=0}^{p_3} \beta_4 \ln T OP_{t-1} + e_t \quad (5)$$

When the long-run cointegration equation was established, the short-run cointegration equation can be specified in the following manner:

$$\Delta \ln T er_{t-1} = \beta_0 + \sum_{i=1}^p \beta_1 \Delta \ln T er_{t-1} + \sum_{i=1}^p \beta_2 \Delta \ln Re m_{t-1} + \sum_{i=1}^p \beta_3 \Delta \ln U nem_{t-1} + \sum_{i=1}^p \beta_4 \Delta \ln T OP_{t-1} + e_t \quad (6)$$

Looking at the short-run ARDL model, $\beta_1 - \beta_4$ remain unchanged in the model, while Δ represents the coefficients of the short-run dynamic to be estimated.

2.5. Hypothesis testing

Ho1: Remittances have no significant effect on promoting terrorist activities.

Ho2: There is no positive significant relationship between unemployment and terrorism.

Ho3: There is no positive relationship between trade openness and terrorism.

3. Results and discussions

3.1. Descriptive statistics of the data used

Table 1 explains descriptive statistics. The mean average of yearly records of terrorism in Turkey are 76 percent to a maximum value of 2.730 percent, and the volatility was 46.8 percent. In the same vein, the average yearly inflows of remittances to Turkey is 47 percent with a maximum value of 92 percent, and also with 23.6 percent volatility. Unemployment has the average value of 95 percent with a maximum value of 1.100 percent and, at the same time, volatility is recorded as 7.5 percent. Equally, the trade openness has the mean value of 160 percent with a maximum value of 17.9 percent with the volatility as 8.20 percent.

Table 1. Descriptive statistics

	LNTER	LNREM	LNUNEM	LNTOP
Mean	1.767	0.473	0.956	1.647
Median	1.685	0.485	0.945	1.672
Maximum	2.730	0.920	1.100	1.779
Minimum	0.700	0.090	0.810	1.463
Std. Dev.	0.468	0.235	0.075	0.082
Skewness	0.094	0.212	-0.210	-0.941
Kurtosis	2.677	1.793	2.159	2.938
Jarque-Bera	0.174	2.043	1.103	4.441
Probability	0.916	0.359	0.576	0.108
Sum	53.030	14.190	28.680	49.436
Sum Sq. Dev.	6.366	1.614	0.166	0.196
Observations	30	30	30	30

Source: authors' representation using e-views 10

All the variables in the data set are positively skewed except unemployment and trade openness, which are negatively skewed, but generally all the data are normally distributed.

3.2. Unit root test

Before adopting the ARDL bound test, we have to test for the stationarity of all the variables in the model to determine the order of integration of each variable. This is imperative because we want to ensure that the variables are not second-order stationary, that is $I(2)$, and also to stay away from deceptive results. Therefore, the use of unit root test in the ARDL method may still be needed to make sure that none of the variables are integrated of order 2 or above. The study utilizes the Bai and Perron unit root test for multiple breaks in addition to Augmented Dickey Fuller and Philips-Perron tests in order to account for possible breaks in the time series data. Thereafter, the structural break-controlled ARDL model is applied by using a dummy variable as a regressor. More so, the rationale for the use of multiple break techniques is because considering just one endogenous break can be deficient and can result in loss of information in the presence of more than one break in the series (Aladejare, 2019; Lumsdaine and Papell, 1997).

The result of the Augmented Dickey Fuller is represented in Table 2. The test is conducted both at level with intercept and with trend and intercept, as well as with differencing at level with intercept and with trend and intercept. As it can be ascertained from Table 2, the ADF test is estimated at levels with intercept and with trend and intercept. After the test, all the variables are not stationary until after differencing that is $I(1)$ order of integration. This is because the value of t-statistics

for the variables is less than the critical values of ADF statistics. Thus, the results show that the null hypothesis for non-stationary cannot be rejected at all levels.

Table 2. ADF unit root test

Variables	ADF				Order of integration
	At level		FirstDifference		
	Intercept	Trend and Intercept	Intercept	Trend and Intercept	
ln TER	-2.463	-2.524	-5.129	-5.367	I (1)
1%	-3.679	-4.309	-3.711	-4.356	
5%	-2.967	-3.574	-2.981	-3.595	
10%	-2.622	-3.222	-2.629	-3.233	
lnREM	-1.812	-2.905	-3.004	-2.888	I (1)
1%	-3.679	-4.323	-3.689	-4.323	
5%	-2.967	-3.580	-2.971	-3.580	
10%	-2.622	-3.225	-2.625	-3.225	
lnUNEM	-1.846	-2.546	-4.593	-4.511	I (1)
1%	-3.679	-4.309	-3.689	-4.323	
5%	-2.967	-3.574	-2.971	-3.580	
10%	-2.622	-3.222	-2.625	-3.225	
lnTOP	-2.035	-3.792	-8.114	-6.694	I (1)
1%	-3.679	-4.394	-3.788	-4.467	
5%	-2.967	-3.612	-3.012	-3.644	
10%	-2.622	-3.243	-2.646	-3.261	

Source: authors' representation using e-views 10

(a)lnTER, lnREM, lnUNEM, and lnTOP stand for log of terrorism, log of remittances, log of unemployment, and log of trade openness, respectively. (b) 1 percent, 5 percent, 1 and 10 percent denote significance at one percent, five percent, and ten percent levels. (c) Optimal lag length is determined by Akaike Information Criterion (d) I(1) stands for order of integration at order one.

Again, the results from both Augmented Dickey-Fuller and Phillips Perron confirmed that the variables are integrated of order one I(1) which impose the adoption of the ARDL approach to co-integration.

Furthermore, when the Phillips Perron test is conducted, the result obtained is in line with the Augmented Dickey-Fuller test result. Similar to Augmented Dickey-Fuller result, the variables terrorism, remittances, unemployment, and trade openness are found to be stationary after taking their first difference at both constant and intercept and trend as reported in Table 3.

Table 3. Philip perron unit root test

Variables	PP				Order of integration
	At level		First Difference		
	Intercept	Trend and Intercept	Intercept	Trend and Intercept	
lnTER	-2.473	-2.414	-9.764	-9.119	I (1)
1%	-3.679	-4.309	-3.689	-4.323	
5%	-2.967	-3.574	-2.971	-3.580	
10%	-2.622	-3.221	-2.625	-3.225	
ln REM	-1.844	-1.512	-2.254	-2.147	I (1)
1%	-3.679	-4.309	-3.689	-4.323	
5%	-2.967	-3.574	-2.971	-3.580	
10%	-2.622	-3.221	-2.265	-3.255	
lnUNEM	-1.750	-2.161	-7.386	-7.260	I (1)
1%	-3.679	-4.309	-3.689	-4.323	
5%	-2.967	-3.574	-2.971	-3.580	
10%	-6.622	-3.221	-2.625	-3.225	
lnTOP	-1.899	-2.454	-5.414	-5.796	I (1)
1%	-3.679	-4.309	-3.689	-4.323	
5%	-2.967	-3.574	-2.971	-3.580	
10%	-2.622	-3.222	-2.265	-3.223	

Notes: (a) lnTER, lnREM, lnUNEM, and lnTOP stand for log of terrorism, log of remittances, log of unemployment, and log of trade openness, respectively. (b) 1 percent, 5 percent, 1 and 10 percent denote significance at one percent, five percent, and ten percent levels. (c) Optimal lag length is determined by the Akaike Information Criterion (d) I(1) stands for order of integration at order one.

Source: authors' representation using e-views 10

3.3. Bai and Perron multiple break test

Testing for structural change has always been an important issue in econometrics because countless political, social and economic factors can cause the relationships among economic variables to change from time to time. Table 4 presents the Bai and Perron multiple break test. In the tests of this study, a maximum of 5 breaks were noted.

The break point in 1996 can be explained by the unfavourable picture and economic crises in Turkey, especially during the 1990s. The duration of duty of the established governments was very short. Thus, government instability could have been

a reason for a break in remittances, unemployment and terrorism in 1996. Similarly, in 2001, Turkey experienced one of the biggest economic and financial crises in its history which caused a substantial decline in production and employment.

Table 4. Multiple structural breaks analysis of the growth model

	Test Statistics (Scale- $\hat{\sigma}_a$)	Critical Values
Sup$F_T(0/1)$	101.07**	25.26
Sup$F_T(1/2)$	108.69**	27.17
Sup$F_T(2/3)$	49.907**	12.47
UDmax(5)	4.799**	1.199
WDmax(5)	3.987**	1.009

Number of selected breaks and the years 2015, 1995, 1996, 2001, 2013

Notes: **Bai–Perron (2003) critical values and statistical significance at the 5% level.
Source: authors' representation using e-views 10

The crisis reduced the confidence of the migrants to remit at least for investment aims. Facing the Syrian migrant crisis and government policy about this issue could be the reason for a break in terrorism, unemployment and remittances in 2015. Migrants from the neighbour county, Syria, caused Turkish citizens to be unemployed as they lost their jobs and ISIS attacks increased during this period. In 2015, remittances data could have been affected in 2015 due to geographical risks. The arrest of the Kurdish Terrorist Organisation (PKK)'s leader, Abdullah Ocalan, in the 1990s could have affected the terrorism data. Besides, a huge earthquake hit Turkey's biggest city, İstanbul, and seriously damaged the economy. This could have equally affected the remittances and unemployment data. This calls for the need to control for structural breaks in the co-integration analysis in order to ensure robust and reliable results.

3.4. Co-integration analysis

The bound test approach tests the null hypothesis that the coefficients of the lagged levels are zero. Moreover, the F-statistics tests the null hypothesis of no long-run co-integration relationship between the variables. Since the study deployed annual time series data, it is important to decide the optimal lag length of the model especially for studies with a small sample data as in the case of this study (30 years). The study determined the optimal lag length of the model by identifying the longest lag and by testing until the lags that are significant are found or identified.

Table 4.1. depicts the results of the computed F-statistics for the model when terrorism is normalized as the dependent variable – Fter (TER, REM, UNEM, TOP). Fter is equal to 6.03 which is higher than the upper critical values at 1 percent, 5 percent, and 10 percent levels of significance. This shows that there is a long-run relationship between the variables in the model.

Table 4.1. Result of bound test for co-integration

Significant	Level	Critical Values	
		Lower bound	Upper bound
1%	significance level	4.31	4.83
5%	significance level	3.38	3.51
10%	significance level	4.30	3.10
F- statistics		6.03*	K = 3

Note: The lag length on each variable is selected by using the AIC criterion. Critical values are generated under the model with unrestricted intercept and trend.*shows computed statistics falls above the upper bound values at 1 percent, 5 percent, and 10 percent level of significance respectively.

Source: authors' representation using e-views 10

3.5. The long-run relationship between the variables in the model

The coefficient of remittances in the long run shows a positive and significant influence on the magnitude of terrorism, even though it is outside the conventional significance level. This is in line with the empirical evidence that finances through illegal remittances can promote terrorism in a country. The amount of remittances are to be around \$372 billion in 2016 (Global Index Data). The result is also in line with the study conducted by Elu and Price (2011) that the remittances significantly influence terrorism by sampling 142 countries in both developing a developed country.

The coefficient of unemployment depicts the positive and significant relationship with terrorism in the long run. It is also correlated with the fact that the more people remain unemployed the bigger the probability of their being vulnerable to all forms of evil, such as terrorism and other social vices (Bilal, 2009). This is also in line with the Keynesian theory of unemployment that high and persistent unemployment can cause economic inequality, poverty, social dislocation, unrest, and conflict: terrorism has a negative impact on subsequent long-run economic growth (Robert and Simon, 2013). Again, when citizens are not able to earn money to meet their financial obligations, they fail to pay their mortgage or rent. For example, they can be easily tempted to engage in all forms of social vices, based on political or economic motives, which will consequently promote terrorism in the host country as well.

Table 5. Estimated long- run coefficient using ARDL approach with breaks

ARDL (1,1,0,0,1) selected based on AIC.30 observation used for estimation from 1990-2019				
Variables	Coefficient	Standard error	Statistics	P. values
C	8.976***	3.449	2.602	0.015
lnREM	1.117***	0.770	2.746	0.012
lnUNEM	0.692*	1.973	-0.857	0.026
lnTOP	-2.993**	2.053	-1.944	0.063
Break _t	0.069**	1.006	1.908	0.001

Note: (a) lnREM, lnUNEM, and lnTOP stand for log of remittances, log of unemployment, and log of trade openness, respectively. (b) *, **, *** 10 percent, 5 percent, and 1 percent denote significance at one percent, five percent, and ten percent levels. (c) Optimal lag length is determined by Akaike Information Criterion (d) I(1) stands for order of integration at order one.

Source: authors' representation using e-views 10

The coefficient of trade openness shows a negative but significant long-run relationship. This is in line with the prior expectation that an open trade activity for any country has no strong effect on its economy or security. The results proved that the issue of security and other social challenges may not arise, no matter how open the trade relationship with other countries is. Its negative but significant effect means that the trade openness can be used vividly in explaining how openness will promote terrorism in a country. This contradicts the notion stated by Donovan (2009) that trade openness can only increase the trade potentials between the host country and rest of the world.

3.6. The short-run relationship between the variables in the model

Table 6 presents the result of the short run dynamic in the model that shows the effect of remittances, unemployment, and trade openness in promoting terrorism. Furthermore, the coefficient of remittances that appeared to be positive and insignificant is due to the fact that even if there is an influx of money from migrants into the country, it will promote terrorism. Since most of the transactions are illegal, they are very likely that they are sourced from terror organisations.

The short run result also shows that remittances have a positive but not a significant effect on terrorism. This result is contrary to the long run result which shows the positive and significant effect of remittances on terrorism. This result also indicates that, in the short run, remittances cannot fully influence terrorism or that only a little variation of terrorism can be explained by remittances flows in a country (Kratou and Gazdar, 2015).

The short run result also shows that remittances have a positive but not a significant effect on terrorism at 10 percent level of significance. This shows that in the short run remittances cannot be used as a major determinant to explain the effect of terrorism on the Turkish economy.

Table 6. Estimated short-run coefficient using ARDL approach with breaks

ARDL (1,1,0,0) selected based on AIC.30 observation used for estimation from 1990-2019				
Variables	Coefficient	Standard error	Statistics	P. values
$\Delta \ln \text{REM}$	0.553***	0.447	1.234	0.226
$\Delta \ln \text{UNEM}$	-0.944***	1.192	-0.791	0.335
$\Delta \ln \text{TOP}$	-2.227**	1.122	-1.984	0.056
Break_t	0.117***	0.012	-1.987	0.000
ECM_{t-1}	-0.757***	0.176	-3.156	0.004
Dependent Variable	= TER			
R^2	= 0.673			
F	= 10.861 (0.0001)			
DW Statistics	= 1.8733			

Source: authors' representation using e-views 10

The short run coefficient of unemployment is found to be negative and not significant, which contradicts the positive and significant nexus found in the long run. This result also indicates that in the short run, the level of unemployment is not enough to use as a basis in explaining its effect on terrorism. This is due to the fact that, in a short period, the level of unemployment in Turkey cannot have much influence on terrorism. This also contradicts the work done by Evans and Ikechuckwu (2018), i.e. that unemployment is the major factor that makes people vulnerable and which can easily tempt them to engage in social vices such as terrorism.

The short run coefficient of trade openness is found to be negative and not significant, which is in line with the earlier thought that trade openness cannot serve as a basis in explaining the effect of remittances on terrorism. This is partly because trade openness can mostly make the economy open, which gives room for multilateral transactions with other countries that will promote the economic growth of the host country (Dollar and Kraay, 2003). In the same vein, trade openness helps the movement of resources from developed to developing economies and supports technological advancement. Nowadays, world economies are reaping fruits of trade openness due to the diffusion and absorption of technology (Shahbaz, 2012). Furthermore, trade openness allows foreign direct investment in the host country, which promotes economic growth and not terrorism as mentioned by Baig (2009).

Furthermore, in order to account for the effect of break periods identified by the Bai and Perron test, the coefficients of the break periods are found to be positive and significant at 5 percent and 1 percent significance levels in the short and long run, respectively. Therefore, it justifies the controlling for the breaks in the model.

3.7. Diagnostic test

The study executed diagnostic tests for serial correlation LM test, heteroscedasticity test, normality test, and Ramsey reset test. They are presented in Table 7. The result shows that the null hypothesis cannot be denied as the F- statistics for the test cannot be rejected. The F-Statistics for the model was found to be 1.574 with a probability value of 0.231, which shows that the serial correlation in the model is absent.

Table 7. Diagnostic test result

Diagnosics test techniques	Statistics	Probabilities
Serial correlation	1.574	0.231
LM test		
Heteroscedasticity	0.779	0.575
Normality test	0.876	0.645
(Jarque-Bera)		
Ramsey reset test	0.523	0.475

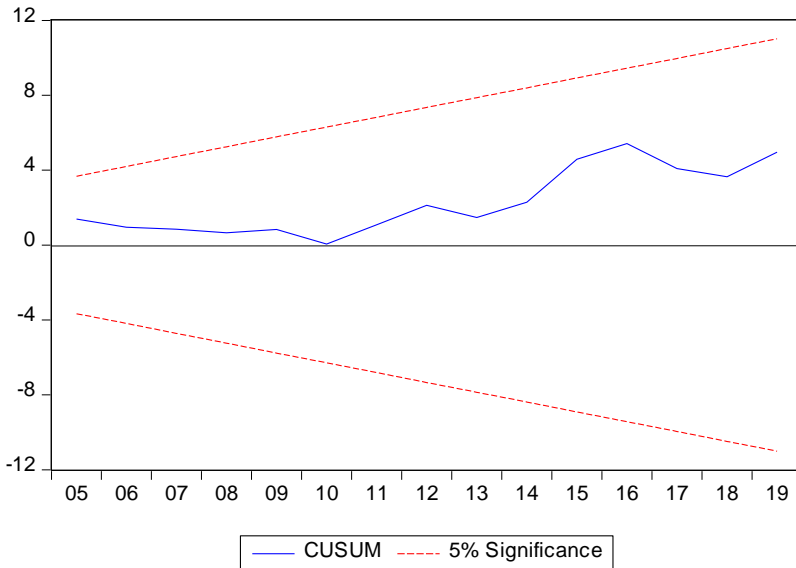
Source: authors' representation using e-views 10

Again, the result shows that the model is normally distributed and passed the heteroscedasticity test. In the same vein, the result shows the test for misspecification using Ramsey RESSET test, and the result reveals that the model is correctly specified.

Finally, Figure 1 and 2 tests for stability of the ARDL model by the use of the CUSSUM and CUSSUMQ techniques carried out by Brown, Durbin and Evans (1975). Besides, the CUSSUM test shows that the regression parameters of the model are relatively unstable. This can be attributed to the fact that the variables have a different order of integration which may ultimately be the resultant factor in the result of the CUSSUM test. This can be seen from the critical line that lies slightly outside the 5 percent critical level of significance.

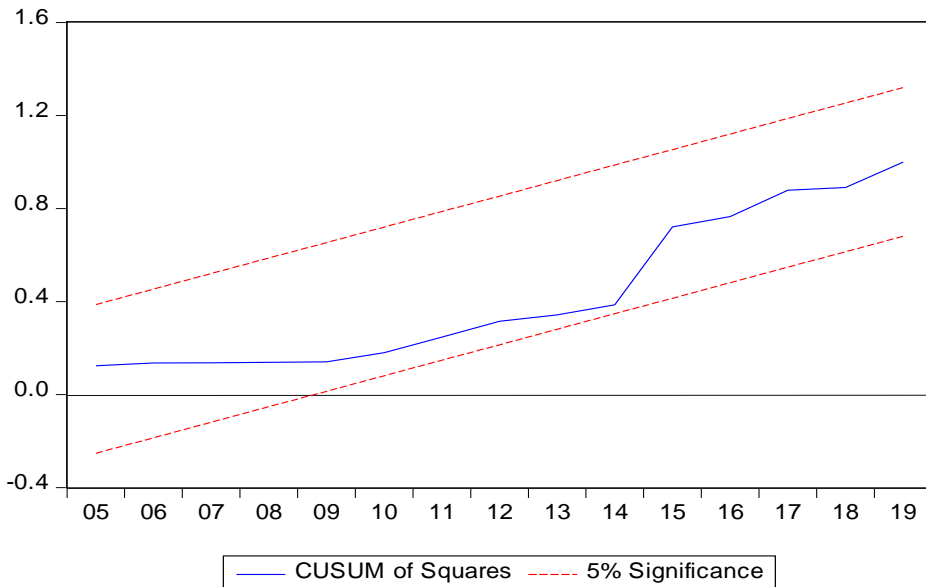
On the contrary, the CUSSUMQ test depicts that the model is practically stable. Notwithstanding, since the CUSSUM test has confirmed that the parameters are stable, it is therefore enough in drawing the conclusion that the model is stable. The CUSSUM result is not fully within the 5 percent level of significance around 2016 up to 2019. This demonstrates that the data is not fully stable. However, this has no effect on the validity of our result since it is only few years that are affected and it is corrected in the CUSSUM square test as indicated in Figure 2.

Figure 1. Plot of cumulative sum of recursive residual



Source: authors' representation using e-views 10.0

Figure 2. Plot of cumulative sum squares of recursive residual



Source: authors' representation using e-views 10.0

Conclusion and policy recommendations

The study efforts to determine the effect of remittances on terrorism in the Turkish economy, times series data ranges from 1990 to 2019 were used in the application of the econometric method popularly known as the Autoregressive Distributed Lag (ARDL). Current analytical data methods were also used to diagnose and determine the properties of the time-series data. As such, the model was estimated to determine the short and long terms effects and their significance. The study has its roots in two models which are closed and open economic models by associating other important variables that help in explaining the model.

The outcomes of the econometric analysis of this study have shown that the coefficient of remittances is positive and significant, which has influence on terrorism. This is in line with the empirical evidence that finances through remittances can promote terrorism in a country. Unemployment also shows that significance has a strong correlation in promoting terrorism in Turkish economy and that persistent unemployment can cause economic inequality, poverty, social dislocation, unrest, and conflict such as terrorism, which has a negative impact on subsequent long-run economic growth. Trade openness shows a negative but significant impact, which indicates that trade openness has a little influence in promoting terrorism. Its also depicts that, since it is negative but significant, trade openness can be used vividly in explaining how openness will promote terrorism in a country. This contradicts the notion that trade openness can only increase the trade potentials between the host country and the rest of the world.

Based on the findings of the study, there is a need for Turkish government to intervene by regulating the inflows of remittances or money generated by its citizens residing in other countries. Besides, the Turkish government should ensure that the funds are used in positive investments in order to curtail the movement of such funds into the wrong hands. It is difficult for financial institutions and intermediaries to comply with money laundering and terrorism financing when accommodating migrant remittances, so there should be specific provision for the operations of these service providers. This should be carefully considered and well applied in order to avoid money laundering and terrorist funding. It is also imperative for the government to provide the opportunities by absorbing the unemployed population in the economy and also to encourage the private sector to employ more people on attractive wage rates that can reduce the level of unemployment to the minimum. This will reduce the chance of Turkish citizens of Kurdish origin to be tempted into illegal economic activities, especially in the eastern regions of Turkey, where terrorist activities are intense due to terrorist groups like PKK. It is also essential for the government to engage in multilateral trade with countries that do not have a history of terrorism and to make sure all economic activities are legal and strictly follow the due process. This will reduce the possibilities of engaging in illegal trade that promotes terrorism in Turkey.

Despite its contribution to the literature, this study is not free from certain limitations. Thus, the paper has pointed out areas to be considered for further research in the field. This includes extending the sample size of the study to see if long-drawn-out time series would produce analogous or dissimilar outcomes. The level of disaggregation of the data should also be expanded by considering sub-categories of remittances, unemployment and trade openness in promoting terrorism. Though the control variables used in this study were carefully chosen after extensive literature assessment, numerous important variables may have been left out, which may explain the perceived relationship between remittances, unemployment, trade openness and terror activities. Hence, different sets of control variables should be considered in the future research in order to expand the debate of the impact of remittances on terrorism, specifically.

References

- Abadie, A. and Gardeazabal, J. (2008), Terrorism and the World Economy, *European Economic Review*, 52(1), pp. 1-27.
- Akhter, N. and Islam, K. (2019), The Impact of Migration and Migrant Remittances on Household Poverty in Bangladesh, *Asian Development Perspectives*, 10(1), pp. 43-59.
- Aladejare, S.A. (2019), Testing the Robustness of Public Spending Determinants on Public Spending Decisions in Nigeria, *International Economic Journal*, 33(1), pp. 1-23.
- Alotaibi, A.R. and Mishra, A.V. (2014), Determinants of International Financial Integration of GCC Markets, *Emerging Markets and The Global Economy: A Handbook*, pp. 749-771.
- Aydaş, S.T., Neyaptı, B. and Metin-Ozcan, V. (2004), *Determinants of Workers Remittance: The Case of Turkey*, Bilkent University Department of Economics Discussion Paper.
- Baig, M.A. (2009), Investigating the Export and Economic Growth Nexus: A Time Series Analysis, *Pakistan Business Review*, 11(2), pp. 318-39.
- Batu, M. (2019), Can Remittances Buy Peace?, *Economics of Transition and Institutional Change*, 27(4), pp. 891-913.
- Bilal, M. (2009), Determinants of Foreign Direct Investment in Cuba: A Quantitative Approach, *Journal of Managerial Sciences*, 4(1), pp. 31-44.
- Borjas, J.G. (1994), The Economics of Immigration, *Journal of Economic Literature*, 32(4), pp. 1667-1717.
- Boubtane, E., Dumont, J.C. and Rault, C. (2014), *Immigration and Economic Growth in the OECD Countries, 1986-2006*, IZA Discussion Paper, 8681, pp. 1-33.
- Brown, R.L., Durbin, J. and Evans, J.M. (1975), Techniques for Testing the Constancy of Regression Relationships over Time, *Journal of the Royal Statistical Society, Series B*, 37(2), pp. 149-192.

- Department of Justice (2017), *Country Policy and Information Note Turkey: Gulenism* (retrieved from <https://www.justice.gov/eoir/page/file/1008341/download>)
- Dickey, D. A. and Fuller, W. A. (1981), Likelihood Ratio Statistics for Autoregressive Time Series with a Unit Root, *Econometrica*, 49(4), pp. 1057-1072.
- Dollar, D. and Kraay, A. (2003), Institutions, Trade and Growth, *Journal of Monetary Economics*, 50(1), pp. 133-162.
- Donovan, E. (2009), Effects of Trade Remittances, and Terrorism, *International Trade and Money*, 2(1), pp. 45-54.
- Dücan, E. (2016), Türkiye’de İç Göçün Sosyo-Ekonomik Nedenlerinin Bölgesel Analizi, *Ekonomik ve Sosyal Araştırmalar Dergisi*, 12(2), pp. 167-83.
- Eckstein, Z. and Tsiddan, D. (2004), Macroeconomic consequences of terror: theory and the case of Israel, *Journal of Monetary Economics*, 51(5), pp. 971-1002.
- Elu, J.U. and Price, G.N. (2011), *Do Remittances Finance Terrorism in Sub-Saharan Africa* (retrieved from <https://pdfs.semanticscholar.org/79e1/25ed5aed69b684579a0d8aac62553d591ea1.pdf>).
- European Parliament (2014), *The Impacts of Remittances on Developing Countries*, Directorate-General for External Policies, Policy Department.
- Evans, O. and Ikechuckwu, K. (2018), The Effects of Foreign Direct Investment, Trade, Aid, Remittances on Tourism on Welfare Under Terrorism and Militancy, *International Journal of Management, Economics and Social Sciences*, 7(3), pp. 206-232.
- Goschin, Z. and Roman, M. (2012), Determinants of the Remitting Behaviour of Romanian Emigrants in an Economic Crisis Context, *Eastern Journal of European Studies*, 3(2), pp. 87-103.
- Gupta, M.R. and Chakraborty, B. (2006), Human Capital Accumulation and Endogenous Growth in a Dual Economy, *Hitotsubashi Journal of Economics*, 47(2), pp. 169-195.
- Hagen-Zanker, J. and Siegel, M. (2007), *A Critical Discussion of the Motivations to Remit in Albania and Moldova*, Maastricht Graduate School of Governance Working Paper, No. MGSOG/2007/WP007.
- Havolli, S. (2009), Determinants of Remittances: The Case of Kosovo, *SSRN Electronic Journal*.
- Jibir, A. and Aluthge, C. (2019), Modelling the Determinants of Government Expenditure in Nigeria, *Cogent Economics and Finance*, 7(1), pp. 1-23.
- Jink, A.K. (2001), Corruption: A Review Journal of Economics Surveys, 15(1), pp. 71 -120.
- Jude, I. (2017), Terrorism and the World Economy, *European Economic Review*, 43(2), pp. 22-29.
- Koçak, Y. and Terzi, E. (2012), Türkiye’de Göç Olgusu, Göç Edenlerin Kentlere Olan Etkileri ve Çözüm Önerileri, *Kafkas Üniversitesi İktisadi ve İdari Bilimler Dergisi*, 3(3), pp. 163-184.

- Kratou, H. and Gazdar, K. (2015), Addressing the Effects of Workers' Remittance on Economic Growth: Evidence from MENA Countries, *International Journal of Social Economics*, 43(1), pp. 51-70.
- Kratou, H. and Yogo, U.T. (2017), Short Run Causality Between Remittances and Terrorism, *SSRN Electronic Journal*.
- Kumar, R.R., Stauvermann, P.J., Patel, A. and Prasad, S. (2017), The Effect of Remittances on Economic Growth in Kyrgyzstan and Macedonia: Accounting for Financial Development, *International Migration*, 56(1), pp. 95-126.
- Lumsdaine, R.L. and Papell, D.H. (1997), Multiple Trend Breaks and the Unit Root Hypothesis, *Review of Economics and Statistics*, 79(2), pp. 212-218.
- Majumder, S.C. and Donghui, Z. (2016), Relationship between Remittance and Economic Growth in Bangladesh: An Autoregressive Distributed Lag Model (ARDL), *European Researcher Series A*, 104(3), pp. 156-167.
- Mascarenhas, R. and Sandler, T. (2014), Remittances and Terrorism: A Global Analysis, *Defence and Peace Economics*, 25(4), pp. 331-337.
- Mughal, M.Y. and Anwar, A.I. (2015), Do Migrant Remittances React to Bouts of Terrorism?, *Defence and Peace Economics*, 26(6), pp. 567-582.
- Niimi, Y., Pham, T. H. and Reilly, B. (2009), Determinants of Remittances: Recent Evidence Using Data on Internal Migrants in Vietnam, *Asian Economic Journal*, 23(1), pp. 19-39.
- Onanuga, A.T., Odusanya, I.A. and Adekunle, I.A. (2020), Terrorism and Financial Flows in Africa, *Behavioural Sciences of Terrorism and Political Aggression*, pp. 1-18.
- Pesaran, M.H., Shin, Y. and Smith, R.J. (2001), Bounds Testing Approach to the Analysis of Level Relationships, *Journal of Applied Econometrics*, 16(3), pp. 289-326.
- Pesaran, M.H. and Shin, Y. (1997), *An Autoregressive Distributed Lag Modelling Approach to Cointegration Analysis*, Symposium at the Centennial of Ragnar Frisch.
- Pesaran, M.H. and Shin, Y. (1995), *An Autoregressive Lag Modelling Approach to Cointegration Analysis*, *Cambridge Working Papers in Economics*, 9514, Faculty of Economics, University of Cambridge.
- Phillips, P.C.B. and Perron, P. (1988), Testing for a Unit Root in Times Series Regression, *Biometrika*, 75(2), pp. 335-346.
- Phillips, P.J. and McDermid, B. (2020), FinTech, Terrorism-Related Fund Transfers and Behavioural Finance, *Dynamics of Asymmetric Conflict*, pp. 1-21.
- Piteli, E.E., Buckley, P.J. and Kafourous, M. (2019), Do Remittances to Emerging Countries Improve Their Economic Development? Understanding the Contingent Role of Culture, *Journal of International Management*, 25(4), pp 1-15.
- Prívvara, A. (2019), Migrants Remittances: Microeconomic and Macroeconomic Contexts, *The EURASEANs: Journal on Global Socio-Economic Dynamics*, 6(19), pp. 51-58.
- Rajput, S.K. O, Bajaj, N.K. and Siyal, T.A. (2019), Impact of Geopolitical Risk on Foreign Remittances, *Econometric Modelling: International Economics eJournal* (retrieved https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3491587).

- Ratha, D. and Sirkeci, I. (2010), Remittances and Global Financial Crisis, *Migration Letters*, 7(2), pp. 125-131.
- Raza, S.A., Shah, N. and Khan, W.A. (2017), Do Workers' Remittances Increase Terrorism? Evidence from South Asian Countries, *MPRA Paper*, 86745.
- Robert, D. and Simon, K. (2013), Remittances and Terrorism, Evidence from Commonwealth of Independent States, *International Journal of Social Economics*, 42(2), pp. 98-111.
- Sakka, M.I.T. and McNabb, R. (1999), Macroeconomic Determinants of Remittances, *World Development*, 27(8), pp. 1493-1502.
- Sevim, Y. (2003), Terör Mağdurları: Geriye Göç Çözüm Mü?, *Uluslararası Güvenlik ve Turizm Dergisi*, 1(1), pp. 17-35.
- Shahbaz, M. (2012), Does Trade Openness Affect Long Run Growth? Cointegration, Causality and Forecast Error Variance Decomposition Tests for Pakistan, *Munich Personal Repec Archive*, Paper No. 37391.
- Sirkeci, I. and Cohen, J.H. (2016), Cultures of Migration and Conflict in Contemporary Human Mobility in Turkey, *European Review*, 24(3), pp. 381-396.
- Şimşek, Y. (2007), Terrorism and Migration in Turkey Between 1992 and 1995, Understanding Terrorism: Analysis of Sociological and Psychological Aspects, in: Süleyman, Ö., Ismail, D., Güneş, D. and Al-Badayneh, M. (eds.), *NATO Science for Peace and Security Series*, 22, pp. 144-60.
- Tang, T.C. (2006), New Evidence on Export Expansion, Economic Growth and Causality in China, *Applied Economics Letters*, 13(12), pp. 801-803.
- Wahba, S. (1991), What Determines Workers' Remittances?, *Finance and Development*, 28(4), pp. 41-44.
- World Bank (2019), *Data release: Remittances to low- and middle-income countries on track to reach \$551 billion in 2019 and \$597 billion by 2021* (retrieved from <https://blogs.worldbank.org/peoplemove/data-release-remittances-low-and-middle-income-countries-track-reach-551-billion-2019>).
- Yoshino, N., Taghizadeh-Hesary, F. and Otsuka, M. (2019), Determinants of International Remittance Inflows in Middle-Income Countries in Asia and Pacific, *ADB Working Paper Series*, 964.
- Zada, K., Tariq, M., Ullah, I., Jan, S. and Malik, Z.K. (2016), The Impact of Terrorism on Foreign Remittances Inflows in Pakistan, *Journal of Applied Environmental and Biological Sciences*, 6(11), pp. 123-132.