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MACROPOLITICAL STABILITY AND ABSENCE OF VIOLENCE/TERRORISM AND FOREIGN DIRECT INVESTMENTS: PANEL ANALYSIS

Abstract

The study investigates the significance of political stability and absence of violence/terrorism on foreign direct investment (FDI) in three panels. The first (overall) panel comprises 110 economies (both developed and developing); the second involves 35 developed economies, whereas the third panel includes 75 developing economies the years between 2002-2015. A Granger causality test, cointegration test and panel ARDL model are employed. The findings of ARDL model show that there is a long-run relationship between political stability and absence of violence/terrorism and FDI for the overall sample as well as for developed countries. In addition, Granger causality test indicates the bidirectional relationship between the economic terms of interest for the overall sample as well as for the sample of developed countries. Nevertheless, developing countries give mixed results. A long-run relationship between FDI and political stability and absence of violence/terrorism is reported whereas there is no evidence on the short-run relationship.

Keywords: macropolitical stability, absence of violence/terrorism, foreign direct investment, panel ARDL, causality

**MAKROPOLİTİK İSTİKRARIN VARLIĞI İLE ŞİDDET/TERÖRİZM
OLAYLARININ MEYDANA GELMEMESİ VE DOĞRUDAN YABANCI
YATIRIMLAR: PANEL ANALİZİ**

Özet

Bu çalışma, politik istikrarın varlığının ve şiddet/terörizm olaylarının meydana gelmemesinin doğrudan yabancı yatırım (DYY) üzerindeki önemini üç panelde araştırmaktadır. İlk (genel) panel, hem gelişmiş hem de gelişmekte olan 110 ekonomiyi içermektedir; ikinci panel, 35 gelişmiş ekonomiyi; üçüncü panel ise 2002-2015 dönemi arasında 75 gelişmekte olan ekonomiyi kapsamaktadır. Çalışmada, Granger nedensellik testi, eşbütünleşme testi ve panel ARDL modeli kullanılmıştır. ARDL modelinin bulguları, gelişmiş ülkeler için olduğu kadar, genel örnekleme de, politik istikrarın var olmasının ve şiddet/terörizm olaylarının meydana gelmemesinin, DYY ile arasında uzun dönemli bir ilişkinin var olduğunu göstermektedir. Buna ek olarak, Granger nedensellik testi, genel örneklemenin yanı sıra gelişmiş ülkeler için de ekonomik açıdan çift yönlü ilişkinin var olduğunu göstermektedir. Ancak, gelişmekte olan ülkelerdeki sonuçlar karışık sonuçlar vermektedir. DYY ile politik istikrarın varlığı ve şiddet/terörizm olaylarının meydana gelmemesi arasında kısa dönemli ilişki ile ilgili olarak herhangi bir bulgu bulunmaz iken, uzun dönemli bir ilişki olduğu, bu çalışma kapsamında ortaya çıkmıştır.

Anahtar Kelimeler: makropolitik istikrar, şiddet/terörizmin meydana gelmemesi, doğrudan yabancı yatırım, panel ARDL, nedensellik

Introduction

In globalized world economy, businesses have the desire of internationalization. In this context, FDI plays a vital role for multinational enterprises. Starting from this point of view, investors extensively analyze riskiness of the investments. Dess and Miller (1996) indicate that, despite there are different types of international market entry strategies such as exporting, licensing, franchising, joint venture and wholly owned subsidiary such as FDI, FDI is the riskiest for several reasons. During the process of internationalization, firms generally face with political, financial, commercial and cross-cultural risk (Çavuşgil, Knight, Rammel, Riesenberger and Rose, 2014). As macro-political risks are considered to be the most crucial and destructive, firms generally take go/no go decision via the level of political risk (Özbozkurt, 2016).

Although political risk contains wide range of components, political stability and absence of violence are key determinants of FDI and are therefore economic terms of interest in this study. As Özbozkurt (2016) indicates that, multinational companies have long-run objectives hence the return on investment takes decades. Thus, multinational companies take cognizance of political stability and political violence events when entering foreign markets.

Literature Review

Up-to-date studies regarding the effect of political instability on economic growth within the host countries (Ahmed and Root, 1979; Afza and Anwar, 2014) report the negative impact. Moreover,

Brada, Kutan & Yiğit (2003) indicate that political instability (including events like conflicts and tensions in international or country level) reduce FDI inflows at a significant level. Hogan Lovells (2015) indicate that most of the investors withdraw or reduce their investment in the case of political instability incident. The Arab Spring that is considered to be one of the most dramatic events in terms of political instability and violence has significantly reduced FDI. The Figure 1 below clearly indicates the Arab Spring's significant negative impact on FDI inflows.

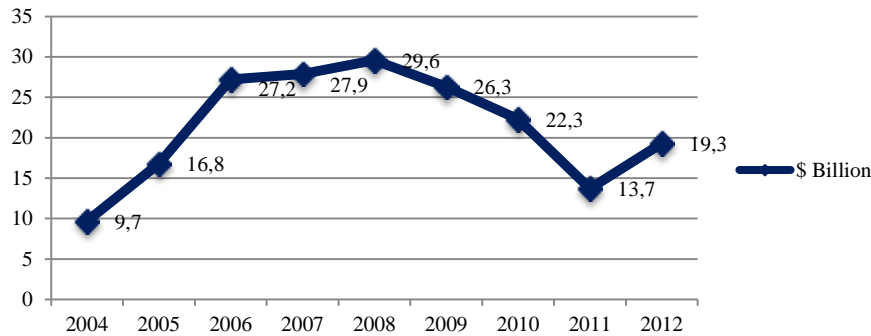


Figure 1: FDI Inflows in MENA Region, 2004–2012 \$ (MIGA-EIU, 2013, p. 59).

In opposition to political instability, political stability shows us a significant positive impact on FDI. Baek and Quian (2011) emphasize that, promoting stable and liberal policies tends to attract more FDI to the host countries. Since international investors have long-term objectives as stated above, they take cognizance of political stability and take position that is proportional to the level of political risk in host country.

On the other hand, political violence is another important component of political risk. Even though, violence incidents may not directly influence companies, their indirect effects may be dramatic (Çavuşgil et al, 2014). In terms of political violence events such as terrorism Afza and Anwar (2014) indicate that political violence and terrorism cause a negative effect on FDI inflows in Pakistan. Moreover, Bandyopadhyay, Sandler and Younas (2015) indicate that many countries that exposed above-average domestic or transnational terrorist attacks during 1970–2011 received FDI that is lower than the average that is calculated using the case of 122 countries.

Another study written by Nitsch and Schumacher (2003) examined that bilateral trade flows and as a consequence, they found in their study that terrorist incidents both reduce FDI and the volume of trade. Thus, political violence components such as terrorism significantly tend to affect on all modes of internationalization.

Data and Methodology

Data

In order to investigate the causal relationship between political stability and absence of violence/terrorism and foreign direct investment, there was a need to select appropriate proxy variables. Jewel (2015) emphasizes that political stability and absence of violence/terrorism: percentile rank (PS) is an appropriate proxy variable of macro-level political stability and absence

of violence/terrorism. Thus, this measure is considered appropriate for this study as well. PS measures perceptions of the likelihood of political instability and/or politically-motivated violence such as terrorism. Percentile rank shows the country's rank among all countries covered by the aggregate indicator, with 0 corresponding to lowest rank, and 100 to highest rank.

Besides, Sothan (2017), Mehic et al. (2013), Dritsakia and Stiakakisb (2014) and Pegkas (2015) indicates that the appropriate proxy variable of FDI is foreign direct investment measured as the ratio of FDI stock to GDP. For this study, this measure is also approved. The data, used to estimate the causal relationship between foreign direct investments and political stability and absence of violence/terrorism are collected for the sample of 110 countries (35 developed and 75 developing) over the period 2002-2015. The list of countries is given in Appendix 1. World Economic Situation and Prospects (WESP) is followed to distinguish between developed and developing countries. The data is collected from World Bank's Indicators, 2017 (because of the availability) in order to get reliable results.

Methodology

The study's econometric methodology involves three steps. Firstly, the panel unit root is tested for both variables. Furthermore, long-run cointegration relationship between variables was analyzed using cointegration test. To test the sensitivity of the results and avoid robust errors, an ARDL model is employed. Conditional on finding cointegration, the causal link between variables has been explored by employing the Granger causality test.

ARDL Model

The paper's main goal is to explore the short-run and long-run relationship between political stability and absence of violence/terrorism and foreign direct investments using an ARDL approach, as introduced by Pesaran et al. (1999). The ARDL model enables the identification of short- and long-run relationships and can be classified as an error correction model. As it is able to test possible long-run relationships irrespective of the integration order of the variables, this approach is relevant in this sense. Nevertheless, this technique cannot be applied when the series are integrated of order 2 (I(2)). Additionally, it provides consistent and efficient estimators because it eliminates the problems resulting from endogeneity by including lag length for both endogenous and exogenous variables. In accordance with Pesaran et al. (1999), the ARDL (p,q) model, including the long-run relationship between variables, can be summarized (Attaoui et al., 2017):

$$\Delta Y_{1,it} = \alpha_{li} + \gamma_{li} Y_{1,it-1} + \sum_{l=2}^k \gamma_{li} X_{1,it-1} + \sum_{j=1}^{p-1} \delta_{lij} \Delta Y_{1,it-j} + \sum_{j=0}^{q-1} \sum_{l=2}^k \delta_{lij} \Delta X_{1,it-j} + \varepsilon_{1,it} \quad (1)$$

where Y is dependent variable and X is the exogenous variable with $l = 1,2,3,4$. ε_{it} is the error term while Δ represents the first difference operator. ARDL is employed in addition to Westerlund error-correction-based panel cointegration tests in order to explore the existence of possible long-run relationships between variables, since the application of traditional cointegration tests in the presence of variables I(0) and I(1) remains unjustified.

Granger Causality

The primarily focus of this research is to support the related empirical literature by using panel causality techniques. For this purpose Dumitrescu-Hurlin (DH) test is used. Lopez and Weber (2017) emphasize that DH provide an extended test designed to detect causality in panel data. The underlying regression may be summarized:

$$y_{i,t} = \alpha_i + \sum_{k=1}^K \beta_{ik} y_{i,t-k} + \sum_{k=1}^K \mu_{ik} x_{i,t-k} + \varepsilon_{i,t} \quad (2)$$

where $x_{i,t}$ and $y_{i,t}$ are the observations of two stationary variables for individual i in period t . Coefficients are allowed to differ across individuals. The lag order K is assumed to be identical for all individuals and the panel must be balanced.

Empirical Results and Interpretations

This section starts by summarizing descriptive statistics. Average FDI as a percentage of GDP equals 6.19% for 110 observed countries. The highest reported value of FDI equals 451.72% while the lowest equals -58.32%. When it comes to developed and developing countries, higher average FDI is reported for developed countries. Standard deviation implies high volatility for the observed period. On the other hand, in terms of political stability and absence of violence/terrorism proxy variable, average PS equals 48.74 for the overall sample. The highest PS value reported is 100 while the lowest equals 0.47. Higher average PS is reported for developed (77.01) compared to developing countries (35.55). Standard deviation implies high volatility for the observed period. To ease interpretation natural logarithm of both variables is calculated and is used in analysis to follow.

The presence of unit root is initially tested for the variables expressed in natural logarithmic forms. The results show that the null hypothesis on unit root is not accepted and therefore rejected for both variables in terms of the overall sample as well as for the sample of developed and developing countries (for 1% level of significance). Cointegration test indicates mixed results on the cointegration between variables. Some of the statistics provide strong evidence on cointegration while some of the results indicate no evidence. Since the focus of this paper is on the short- and long-run relationships between the variables of interest and on causality, only these results are reported below.

Table 1 summarizes the results of long-run and short-run elasticity of FDI with respect to political stability and absence of violence/terrorism. The study reveals a positive and significant relationship between PS and FDI in both the short- and the long-run for the overall observed sample as well as for the sample of developed countries. In terms of developing countries, PS is reported to have a significant positive impact on FDI only in the long-run. In terms of the short-run, FDI is more elastic to the change in PS in developing compared to developed countries.

Table 1: ARDL Approach (FDI - Dependent Variable)

		Coef.	St. Error	z	P>z	95% Conf. Interval	
All countries	ECT						
	PS	0.009401	0.005182	1.81	0.07	-0.00076	0.019558
	SR						
	ECT	-0.63731	0.034137	-18.67	0.00	-0.70422	-0.5704
	PS	0.053614	0.033466	1.60	0.10	-0.01198	0.119206
	Dl. _cons	3.242303	0.632923	5.12	0.00	2.001796	4.48281
Developed countries	ECT						
	PS	0.02469	0.010164	2.43	0.02	0.00446	0.04492
	SR						
	ECT	-0.83802	0.059814	-14.01	0.00	-0.95526	-0.72079
	PS	0.000848	0.000386	2.2	0.03	9.21E-05	0.001605
	Dl. _cons	7.535453	2.019994	3.73	0.00	3.576338	11.49457
Developing countries	ECT						
	PS	0.013473	0.007274	1.85	0.06	-0.00078	0.027731
	SR						
	ECT	-0.563	0.038303	-14.7	0.00	-0.63807	-0.48792
	PS	0.014557	0.016588	0.88	0.38	-0.01796	0.047069
	Dl. _cons	2.198719	0.30777	7.14	0.00	1.595502	2.801937

Source: Authors

This paper ends by summarizing the results of DH Granger non-causality test. Table 2 stated above shows us the bidirectional causal relationship between economic terms of interest. It implies that political stability and absence of violence/terrorism attracts foreign direct investors. In addition, it is implied that FDI is reported to attract political stability in the host country. These results are confirmed in terms of the overall sample of countries as well as for the developed countries. However, mixed results are obtained for developing countries. The obtained results are consistent with Busse and Hefeker (2007).

Table 2: DH Granger Non-Causality Test Results

	Dependent variable	Independent variable	W-bar	Z-bar	Z-bar tilde	Decision
All countries	FDI	PS	4.3341	12.2402 (0.0000)*	3.7619 (0.0002)*	PS Granger causes FDI.
	PS	FDI	1.7460	5.5323 (0.0000)*	2.4026 (0.0163)*	FDI Granger causes

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						PS.
Developed countries	FDI	PS	5.5429	10.4802 (0.0000)*	3.7941 (0.0001)*	PS Granger causes FDI.
	PS	FDI	1.9380	3.9239 (0.0000)*	1.8799 (0.0601)*	FDI Granger causes PS.
Developing countries	FDI	PS	1.3465	2.1222 (0.0338)*	0.3862 (0.6993)*	Mixed results.
	PS	FDI	1.6564	4.0194 (0.0001)*	1.6255 (0.1041)*	Mixed results.

Note: * - *p* value

Source: Authors

Conclusion

Political stability and absence of violence/terrorism significantly tends to affect FDI positively since stable and liberal policies tends to attract more FDI to the host countries. Therefore this paper aimed to study the relationship between political stability and absence of violence/terrorism and FDI using panel data methodology. The study investigates the significance of political stability and absence of violence/terrorism on foreign direct investment (FDI) in three panels. The first (overall) panel comprises 110 economies (both developed and developing); the second involves 35 developed economies, whereas the third panel includes 75 developing economies the years between 2002-2015.

ARDL model indicates the results of long-run and short-run elasticity of FDI with respect to political stability and absence of violence/terrorism. The study reveals a positive and significant relationship between PS and FDI in both the short- and the long-run for the overall observed sample as well as for the sample of developed countries. In terms of developing countries, PS is reported to have a significant positive impact on FDI only in long-run. In terms of the short-run, FDI is more elastic to the change in PS in developing compared to developed countries.

This paper ends by summarizing the results of DH Granger non-causality test. A bidirectional causal relationship between economic terms of interest is reported. It implies that political stability attracts foreign direct investors. In addition, it is implied that FDI is reported to attract political stability in the host country. These results are confirmed in terms of the overall sample of countries as well as for the developed countries. However, mixed results are obtained for developing countries.

The results suggest that promoting stable and liberal policies tends to attract more FDI to the host countries. This is since international investors have long-term objectives and take cognizance of political stability and take position that is proportional to the level of political risk in host country.

Therefore, policy makers should do necessary changes to foster political stability and absence of violence/terrorism since these components are reported as fundamen

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Appendix 1

Afghanistan	Canada*	Honduras	Malaysia	Senegal
Albania	Chad	Hong Kong	Malta*	Serbia
Algeria	Chile	Hungary*	Mexico	Singapore
Angola	China	Iceland*	Morocco	Slovak Republic*
Argentina	Colombia	India	Namibia	Slovenia*
Armenia	Costa Rica	Indonesia	Nepal	Spain*
Australia*	Cote d'Ivoire	Ireland*	Netherlands*	Sri Lanka
Austria*	Croatia*	Italy*	New Zealand*	Sudan
Azerbaijan	Czech Republic*	Jamaica	Nigeria	Sweden*
Bahamas	Denmark*	Japan*	Norway*	Switzerland*
Bahrain	Ecuador	Jordan	Oman	Thailand
Bangladesh	Egypt, Arab Rep.	Kazakhstan	Pakistan	Tunisia
Barbados	Estonia*	Kenya	Panama	Turkey
Belarus	Ethiopia	Kuwait	Paraguay	Uganda
Belgium*	Fiji	Kyrgyz Republic	Peru	Ukraine
Bolivia	Finland*	Lao PDR	Philippines	United Arab Emirates
Bosnia and Her.	France*	Latvia*	Poland*	United Kingdom*
Botswana	Germany*	Lebanon	Portugal*	United States*
Brazil	Ghana	Lithuania*	Qatar	Uruguay
Bulgaria*	Greece*	Luxembourg*	Romania*	Yemen, Rep.
Cambodia	Grenada	Macedonia, FYR	Russian Federation	Zambia
Cameroon	Guatemala	Madagascar	Saudi Arabia	Zimbabwe

Note: * denotes developed countries. The rest are developing countries.