

# The Nexus between Political Risks and Foreign Direct Investment: An Empirical Analysis for North African Countries<sup>1</sup>

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## Abstract

Drawing from the ICRG data set, this study aims to analyze the intricate linkage between political risks and foreign direct investment via a number of control variables including trade openness, the consumer price index and per capita GDP. Since there has been a paucity of research on certain determinants of FDI in the North African context, we examine the impact of political risks on foreign direct investment inflows in six North African countries covering the period 1996-2014 accounting for the presence of possible cross-sectional dependence in the heterogeneous panel data. Whereas the results obtained from Pedroni (1999) and Johansen-Fisher co-integration tests show that there is a long-run co-integration relationship, coefficients obtained from the FM-OLS estimator indicate that a low level of political risks has a positive impact on the foreign direct investment inflows, albeit with some variation within select countries. The Canning and Pedroni (2008) causality test, on the other hand, finds evidence that there is a causal relationship between political risks and FDI for four countries (Algeria, Libya, Tunisia, and Egypt) in the sample. Hence, the results suggest that political risks are significant determinants of foreign direct investment for an array of countries in North Africa

*Key Words:* Foreign direct investment, Political risks, North African countries, Panel co-integration, Canning and Pedroni (2008) Causality Test

## Politik Risk ve Doğrudan Yabancı Yatırım Arasındaki İlişki: Kuzey Afrika Ülkeleri İçin Ampirik Bir Analiz

### Öz

Bu çalışma, politik risk ve doğrudan yabancı yatırım girişleri arasındaki ilişkiyi dışa açıklık oranı, tüketici fiyat endeksi ve kişi başı GSYH gibi bazı kontrol değişkenlerin yardımıyla tespit etmeyi amaçlamaktadır. Kuzey Afrika ülkelerinde doğrudan yabancı yatırımların belirleyicileri üzerine az sayıda çalışma yapılmış olması nedeniyle 6 Kuzey Afrika ülkesine 1996-2014 döneminde gelen doğrudan yabancı yatırımlar üzerinde politik risklerin etkisi, yatay kesit bağımlılığı ve heterojen panel yapısı dikkate alınarak incelenmiştir. Pedroni (1999) ve Johansen-Fisher eşbütünlük testleri ile uzun dönemde değişkenler arasında ilişki olduğu belirlenmiştir. FMOLS tahmincisi ile elde edilen sonuçlar ülke bazında farklılık gösterse de düşük düzeyde politik riskin doğrudan yabancı yatırım girişleri üzerinde pozitif etkisi olduğu gözlenmiştir. Canning ve Pedroni (2008) nedensellik testine göre 4 ülkede (Cezayir, Libya, Tunus ve Mısır) politik risk ve doğrudan yabancı yatırım girişleri arasında nedensellik ilişkisi tespit edilmiştir. Bu doğrultuda ilgili ülkelerde politik riskin doğrudan yabancı yatırımların önemli bir belirleyicisi olduğu ifade edilebilir.

*Anahtar Kelimeler:* Doğrudan yabancı yatırım, Politik risk, Kuzey Afrika ülkeleri, Panel eşbütünlük, Canning ve Pedroni (2008) Nedensellik Testi

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## Introduction

It is often believed that foreign direct investment (FDI) is a major catalyst for development in a global economic system. Therefore, many developing countries seek to encourage investment to ensure their economic growth since they suffer from insufficient development of their domestic capital markets in terms of size and depth. Given the fact that developing countries lack capital and savings, there is no doubt that foreign direct investment is a crucial factor for economic growth. In other words, in many cases FDI is considered to be the only way of compensating for the lack of domestic investment necessary for economic growth (De Mello 1997, Borensztein, De Gregorio, & Lee, 1998, Herzer, 2012). The key question that needs to be answered here is what are the main determinants of inward FDI. This study aims to explore the theoretical and empirical association between political risks and foreign direct investment for North Africa.

It has been argued for almost more than two decades that institutions matter for economic growth. Since the 1970s, there have been numerous studies emphasizing the relevance of institutions on the economy (see. North, & Thomas, 1973; North, 1990; Acemoglu, Johnson, & Robinson 2005). Of these studies, several of them underlined the nexus between institutions and foreign direct investment (Asiedu 2006, Busse, & Hefeker 2007, Ali, Fiess, & MacDonald 2010). However, there are certain caveats in the literature with regard to the nexus between political risks and FDI. Notwithstanding the ample research showing the impact of institutional quality including multiple sub-components of it on FDI, only a scarce number of studies have taken political risk as an independent explanatory variable into account (for exceptions see. Nelson, Sooreea, & Gokcek 2016; Gobinda Goswami, & Haider, 2014; Rogmans, & Ebbers, 2013). In addition to this, research accounting for regional and sub-regional variations is limited. To fill this gap, this study investigates the largely neglected nexus between political risk and FDI for North African countries with advanced econometric methods.

North African developing economies like many other developing countries are acutely dependent on FDI to sustain their economic growth. For this reason, North African countries have made a huge effort to establish the necessary environment to encourage FDI. Certainly, massive liberalization policies, undertaken since the mid-1980s, have paved the way for FDI (Kyu-Han, 1999, p. 66). Moreover, steps taken to increase regional integration may well be identified as the influence of globalization in the region. Within this framework, signing the Euro-Mediterranean Partnership (EMP) with the European Union, North African countries have aimed at attracting significant foreign direct investment inflow from the EU (Aghrout, 2009). Nevertheless, despite these efforts to boost FDI inflow, only very limited success has been achieved. Most of these countries have been plagued by political crises, civil unrest and even terrorism. There is no doubt that political risks are one of the underlying causes for the disappointing volume of FDI flows into North African countries. According to the African Development Bank (AfDB), North Africa still struggles with several drawbacks to achieve desired macroeconomic outcomes, although there have been some positive developments in the region's economy since the political turbulence of the Arab Spring began to dissipate (African Development Bank, 2018).

Our contribution to the current literature is two-fold. First, as mentioned earlier, despite the fact that there is plenty of research focusing on the role of institutional quality for inward FDI, they don't investigate the regional and sub-regional contexts. Regions and sub-regions have recently become of paramount importance in economics for a variety of reasons. Above all, individual regions may deviate from the overall characteristics of the wider geography focused on. Similarly, regions show considerable variation within themselves with sub-regions differing from the regions they are embedded into. The second contribution is more related to the method used. Most existing studies do not provide a causal explanation which accounts for the endogeneity problem stemming from the potential two-way interaction between FDI and political risks. This research provides a causal explanation by taking into consideration cross-sectional dependence and heterogeneity which are a widespread phenomenon in panel data. Therefore, it can be argued that by providing a sub-regional outlook with new methodological rigor, this study contributes to the literature on FDI –political risks

## Theoretical Framework: Political Risk and FDI

Since Foreign Direct Investment is of vital importance for economic development in many emerging/developing countries, there is a good deal of research exploring the determinants of foreign direct investment. More conventional studies are geared towards providing a general theory of FDI. For example, Dunning (1993) utilizes the OLI framework to account for the motivations of multinationals in engaging in FDI. OLI theory, also known as the eclectic theory of FDI, is based on three main vectors: ownership, location, and internalization advantage (see also. Naudé, & Krugell, 2007, p. 1224). Of these vectors, location advantage is closely associated with political risks. Whereas ownership and internalization are firm-level factors, location is a country-level factor (Resmini, 2000, p. 668). Location advantage comprises factors such as input costs, the price of raw materials and the tax regime provided by the host country. There is no doubt that institutional quality in general and political risks in particular can be taken under the heading of location advantage of the host country.

Against this background, it can be argued that the literature examining FDI started to put more of an emphasis on institutions with the rise of institutional economics. Particularly, scholars of economic and political science put a major effort into solving the puzzle concerning the institutional determinants of inward FDI. They generally utilize different concepts measuring the same phenomenon that revolves around the political and institutional investment environment. Research into political risk and FDI is closely related to institutional economics since the political risk variable basically measures the investment environment of the host county. Hayakawa Kimura and Lee (2013, footnote 4, p. 62), argue that a block of studies use political risk and institutional quality “interchangeably”. We can also add good governance indicators which share a lot of similarities with the two measures mentioned above in terms of the components utilized.

There are two strands of research examining the association between political risks and FDI. The first strand derives from the broader literature linking institutional quality and FDI. Dramatic changes in political institutions of host countries and their subsequent policies lead to political uncertainty, which is detrimental to foreign investment (Brunetti, & Weder, 1998). Henisz (2000) and Ali, Fiess and MacDonald (2010). further explore the issue by underlining the impact of political risks that influence potential investment decisions. In a political environment, where there are arbitrary protocols that do not guarantee property rights and constant tax rates; this implies that there are certain political risks in the investment environment. In addition to these, expectations of investors are another determinant of investment decisions. In a political environment, where there is political instability, civil or an inter-state war, low profitability, due to the interruption of production or the decrease in value of invested assets, these factors hinder the decision of investment (Brada, Kutan, & Yigit, 2006, p. 657-658).

Drawing from North (1990), Ali, Fiess and MacDonald (2010, p. 203) argue that the impact of institutions, including political ones, on economic performance is closely linked to transaction and production costs for two reasons. First, transaction costs basically consist of costs related to setting the market value of the commercial product and of costs related to establishing as well as protecting the property rights of these products. Transaction costs composed of these two factors stem from information asymmetry between actors in the market. States, however, might reduce information asymmetry by establishing law and order by means of formal and informal institutions. Absence of or insufficient protection of property rights and non-binding contracts, on the other hand, would increase the risk premium and thus certainly lead to the rise of transaction costs. Second, the institutional structure will have an impact on production costs as well. Among other things, bureaucratic red tape increases production costs, which eventually have a negative impact on the business environment of companies. Therefore, institutional reform is proposed as a means of overcoming the economic downturn for developing countries (Campos, & Kinoshita, 2008; Gastanaga Nugent, & Pashamova 1998).

The second line of literature, on the other hand, focuses on political risks more exclusively. Political risk is an elusive concept that is quite difficult to measure and quantify. There is no doubt that any country which is politically stable will attract the investment necessary for economic growth. According to Desbordes (2010, p. 94), political risks increase “both [the] cost of doing business and uncertainty” The link between foreign direct investment and political risks have been thoroughly investigated by a variety of scholars. For example, Schneider and Frey (1985) and Fatehi-Sedeh and Safizadeh (1989) examined the negative relationship between political instability and incoming investment. Whereas one strand of

literature relies on some components of political risks such as corruption and economic freedoms, others employ a composite measure including several other measures.

The literature can be subsumed under three headings as the spatial dimension is taken into account. First, there are the large N studies that consist of developed and developing countries encapsulating various regions within a global viewpoint. The second is regional studies investigating specific regions such as Africa, Latin America or the MENA region. The last is sub-regional studies that cover only a set of countries located in a sub-region such as North Africa or the Gulf region. Apart from these studies, there is a range of country-specific research on the issue as well. In addition to this, there are multiple methodologies employed to ascertain the determinants of FDI ranging from survey analysis to formal modeling and time-series cross-section. Conflicting results stem from many factors including the measures, sample sizes and methodologies utilized as well as the periods covered.

Most of the large N studies are not unanimous in their conclusions about the nexus between political risk and FDI. Even though the majority of these studies emphasize the negative relations between political risk and FDI, a body of literature shows that there is no significant relation at all. In the study of Khan & Akbar (2013), the effect of political risk on FDI in 94 countries for 24 years is analyzed employing the pooled OLS estimation technique. The study found that most of the political indicators, including political risks, have a certain negative impact on FDI in the selected countries, particularly the developing ones. Furthermore, political risk is a greater obstacle in the LMICs in comparison to the rest of the sample. Gobinda Goswami & Haider, (2014), reached a similar conclusion for 146 countries including OECD or non-OECD members for 1984-2009. Using Fixed Effect Estimation. Hayakawa, Kimura, and Le (2013) divided the risk into two categories, political and financial risk. Using dynamic GMM for 89 countries (developing 56, developed 33) from 1985 to 2007, Hayakawa, Kimura, and Le (2013) came to a similar conclusion indicating that political risk has a significant negative impact especially for developing countries. Janeba (2002), on the other hand, draws from a formal model displaying that MNC does not prefer countries with low credibility in terms of commitment even if they offer subsidies. As opposed to these studies, Hausmann & Fernandez-Arias, (2000, p. 10) argued that the negative impact of country risk on FDI “loses significance when control variables are added” in his research covering Latin America and the Middle East.

In a similar manner, studies focusing on developing countries had mixed results regarding the relationship between political risk and FDI. In this line of research, one strand finds that there is a consistent negative relationship between political risk and FDI. One of the earlier studies, for example, Singh and Jun (1999) examined thirty-one developing countries using pooled data and showed that political risk is one of the significant determinants of FDI for the period of 1970-93. Busse and Hefeker (2007) investigated 83 developing countries between 1984 and 2003 using GMM. Employing ICRG data in their analysis, they also found a negative relationship between political risk and FDI. Krifa-Schneider and Matei (2010) investigated political risk and FDI in developing economies employing panel data from 33 countries. Covering the period 1996-2008, the authors found that reduced levels of political risk are closely related to the increase in FDI inflows. In more recent research, Nelson, Sooreea, & Gokcek (2016), concluded that nations with increased FDI inflows have decreased levels of political risk in their study comprising 30 countries time-series data between 1984 and 2012. Hyun, (2006) is exceptional in his research in terms of checking for cointegration for 62 developing states encompassing the period between 1984 and 2003 and utilizing fixed-effect OLS and system GMM estimators. For short-run dynamics, the author utilized the error correction model by taking advantage of both fixed-effect OLS and system GMM estimators. According to the test results, whilst institutional quality and FDI are cointegrated in the long-run, short-run causality between the two variables does not exist.

A good number of studies, on the other hand, did not find a negative influence of political risks on FDI. They do not consider political risk as a significant determinant of FDI. Asiedu (2002), for instance, surveyed 71 developing countries including 32 Sub-Saharan Africa and 39 non-Sub-Saharan countries and found no significant relation. Using pooled OLS, Kolstad and Tondel (2002) looked at 61 developing countries for the period of 1989-2000 and found that bureaucracy, external conflict, law and order and government stability are not significant determinants of FDI inflow. By the same token, using OLS from 1980 through 1994, Noorbakhsh, Paloni, and Youssef, (2001, p. 1599) examined 36 developing countries and found no significant relationship. Jadhav and Katti, (2012), on the other hand, investigated the influence of institutional and political variables for BRICS countries' panel data from 2001 to 2010. Whereas institutional variables include corruption, the rule of law, voice and accountability, the political

risk variable, on the other hand, encompasses political stability, absence of violence, government effectiveness, and regulatory quality. They, nevertheless, obtained mixed results. Political stability, voice and accountability, and control of corruption were found to be the significant variables that account for FDI.

Apart from these studies, there is also a body of literature that investigates the impact of individual variables that can be considered as components of political risk. Egger & Winner (2005), for example, examined a sample of 73 countries over the period 1995 to 1999. Using generalized least squares (GLS) with the Hausman and Taylor estimator, they found a positive linkage between corruption and FDI stating that corruption may stimulate FDI inflows under some specific circumstances. Li and Resnick (2003), on the other hand, examined 53 developing countries through the period 1982-1995 and showed that “both property rights protection and democracy-related property rights protection” boost the FDI inflow (Li, & Resnick, 2003, p. 178).

In addition to the above mentioned research, more region-focused studies are also prevalent in the related literature. For the purpose of this study, only MENA and African regions in which North African countries are located are surveyed. In this vein, Méon and Sekkat, (2004), for example, argued that functioning institutions play a vital role in the integration of MENA countries to the global trade circle for the period 1990 to 1999 using fixed and random effect regression. The authors employed extreme bounds analysis in a cross-sectional research design examining 18 Middle Eastern and North African countries. Using a random effect dynamic panel, Chan and Gemayel (2004) showed that political instability was closely associated with foreign direct investment for 19 MENA countries from 1990 to 1999. Moosa, (2009, p. 1563) argued that FDI can be examined by taking into consideration “GDP growth rate, enrollment in tertiary education, spending on research and development, country risk and domestic investment” and further claimed that the country risk has a significant negative impact on FDI. Mohamed and Sidiropoulos, (2010) employed Fixed Effects Panel Least Squares Estimation for 12 MENA countries. They concluded that institutional variables such as corruption, quality of bureaucracy, the rule of law, expropriation risk, and repudiation of contracts are significant factors for inward FDI. Mina (2012) revealed that reducing the appropriation risk has a positive effect on FDI by utilizing Random effect, fixed effect and GMM estimations for 8 MENA countries over the period 1991–2007. Al-Khourri and Abdul Khalik (2013) investigated 16 MENA countries over the period 1984-2011 and argued that lack of political risk together with agglomeration and market size have a significant positive impact on FDI. In contrast with these studies, Abbas and El Mosallamy (2016) employed random effect estimation over the period 2006 -2013 for 13 MENA countries and discovered that political stability has no significant effect on FDI. Similarly, Rogmans & Ebberts, (2013) indicated that environmental risk as a part of political risk is not a significant factor for 16 MENA countries during the 1987-2008 period, based on an OLS analysis.

North African countries were also included in the studies investigating the regional dynamics of incoming FDI to Africa. For this reason, this section explores the literature sampling not only of Sub-Saharan countries. Naudé and Krugell (2007) investigated 43 countries for the period between 1970 and 1990 using a GMM estimator and concluded that a combination of policy and institutional factors affiliated with policy risks are the direct determinants of FDI to Africa. Anyanwu and Yameogo (2015), using GMM-OLS, is one of the studies which did not check for political risk yet found that regime type has no impact whereas GDP per capita, infrastructure and trade openness have a significant influence on FDI for 53 African countries covering the years between 1970 to 2010. Bouchoucha and Benammou (2020) examined 41 African countries for the period of 1996 to 2013 using fixed effect (FE), random effect (RE) and system GMM. The author concluded that the voice and accountability are positively and significantly correlated with attractiveness.

Some other studies, on the other hand, look at the determinants of FDI for the Mediterranean region. Altomonte and Guagliano (2003), employing survey data, investigated 3500 European multinational corporations covering 48 industries that were investing in Central and Eastern Europe as well as the Mediterranean (MED) over the 1990–1997 period. They found that the legal framework and business environment by and large have a positive effect on FDI in the manufacturing and services industries. In contrast to previous studies, Jiménez (2011) explored FDI flow from the Mediterranean basin (Spain, France, and Italy) toward Central and East Europe (CEE) and North Africa from 1999 to 2006 with a sample of 336 observations. According to the author, against conventional wisdom, FDI flows are not adversely affected by rises in the political risk level.

Apart from large N studies research with a regional focus, there are a number of single and comparative case studies on the determinants of FDI. Those studies mainly focus on the attributions of home countries. Wei (2005) examined the inward FDI patterns to China and India for the period of 1987 to 2000 for 15 OECD countries. Using the random effect estimation technique and Oaxaca-Blinder decomposition, the study showed that country risk is an influential factor for India but not for China. In a similar manner, Zheng (2009) compared India and China using dummy variables in OLS estimation for the time period from 1984 to 2002. The results indicated that host country risk and political instability are significant factors, both of which negatively affect China and India. Asif, Majid, Yasir, and Ali (2018), on the other hand, investigated the conditions of FDI for Pakistan as a single-case for the period from 1984 to 2013. The authors concluded that government stability is a positive factor. Similarly, using the autoregressive distributed lag (ARDL) approach for Pakistan covering the period 1981- 2012, Nasreen and Anwar (2014) found that political risk prevents FDI for Pakistan.

Rather than focusing on inward FDI, an array of studies, on the other hand, focuses on outward FDI from a single home country to various host countries. Accordingly, investigating bilateral FDI flows, a host of this research has embarked on a gravitational analysis emphasizing the impact of political risk on FDI. Kolstad and Wüig (2012) examined the host country determinants of Chinese outward FDI in the period 2003–2006. The authors concluded that Chinese outward FDI is dependent on market size, markets, natural resources and institutions. Poor institutions and outflowing Chinese FDI, particularly to non-OECD countries, were positively related. Sanfilippo (2010) similarly examined Chinese FDI flows to 41 African countries over the period 1998–2007, employing a least squares dummy variables (LSDV) model, and found that political risk is not a significant variable for FDI. Using 2002 observations obtained from survey data, Quer and Claver, (2007) concluded that political stability plays no significant role in Spanish investment to Morocco.

Another strand in the literature focuses on outgoing FDI from the United States to other countries by investigating firm-level or country-level data. One of these studies, Wheeler and Mody (1992), for example, showed that political risk and organizational efficiency are not consequent upon ascertaining the production location decisions of U.S. companies operating between 1982 and 1988 in 42 countries. Using global survey data and Poisson QMLE estimation, Bénassy-Quéré, Coupet, and Mayer (2007) examined the dispersion of US FDI stock with a panel fixed effect gravity model for 52 foreign countries for the period between 1985 and 2000. They highlighted the fact that protected property rights, corruption, and political stability have a positive significant effect on FDI. Desbordes, (2010), on the other hand, investigated 13 sectors and 20 developing countries over the 1990–98 period using system GMM. The author concluded that political risks in tandem with global diplomatic risk have an influence on U.S. MNE's bilateral FDI decisions. Centering on U.S. majority-owned firms, Vadlamannati (2012) utilized a multilevel mixed-effects linear instrumental variable approach for the sample of 101 developing countries. According to the author, a lack of political risks had a positive influence on FDI during the period 1997–2007.

As illustrated above, some studies focused on bilateral relations between a country and a vast number of states such as the literature focusing on FDI from home countries such as the US or China. Other studies sought to give a more global or regional outlook by employing panel data in their analysis. More region-focused studies investigated outsourcing FDI to the host countries located in South Asia, Central Europe or Africa. There is no doubt that Africa has been one of the understudied regions with regards to the inflow of FDI. Despite the fact that there is relatively more research on Sub-Saharan Africa in the African continent, North Africa has attracted less attention in econometric studies. There is an array of research focusing on each variable composing political risk separately on Africa. In this regard, the relation between corruption and FDI in Africa constitutes a large body of literature in itself.

We have summarized the empirical literature on the nexus between political risk and FDI in Table 1. In the light of empirical studies, surveyed within the scope of this research, the indications are that there is considerable variation with regards to the relationship between political risk and FDI. These variations are also pertinent at regional and sub-regional levels.

**Table 1.** *Summary of Empirical Studies*

Author(s)	Countries	Time Period	Econometric Techniques
<i>Multicountry Studies</i>			
Schneider and Frey (1985)	80 less developed countries	1976, 1979, 1980	OLS
Wheeler and Mody (1992)	42 countries	1982-1988	FE
Noorbakhsh, Palonia and Youssef (2001)	36 developing countries	1980-1994	Panel data estimation FE model
Asiedu (2002)	71 developing countries (32 Sub-Saharan Africa and 39 non-Sub-Saharan countries)		OLS
Altomonte and Guagliano (2003)	48 industries in 10 Mediterranean and 8 Central and Eastern European countries(host)	1990-1997	GEE (Generalized maximum-likelihood estimation techniques)
Li and Resnick (2003)	53 developing countries	1982-1995	Pooled time series cross-section (TSCS)
Méon and Sekkat (2004)	Between 34 and 107 countries	1990-1999	FE and RE regression
Chan and Gemayel (2004)	19 MENA	1990-1999	RE dynamic panel model
Egger and Winner (2005)	73 developed and less developed countries	1995-1999	FE, GLS with Hausman and Taylor estimator, GMM
Hyun (2006)	62 developing countries	1984-2003	fixed effect OLS and system GMM estimators
Busse and Hefeker (2007)	83 developing countries	1984-2003	GMM and FE models
Naudé and Krugell (2007)	43 African countries	1970-1990	Dynamic one-step GMM
Moosa (2009)	18 Middle Eastern and N. African Countries		Extreme bounds analysis (EBA)
Desbordes (2010)	13 sectors and 20 developing countries	1990-1998	System GMM
Krifa-Schneider and Matei (2010)	33 developing and transition countries	1996-2008	Fixed effect model and GMM
Mohamed and Sidiropoulos (2010)	36 countries (12 MENA, 24 developing countries)	1975-2006	FE and RE panel data techniques
Jadhav and Katti (2012)	BRICS countries	2001-2010	FE and RE models
Mina (2012)	8 MENA countries	1990-2008	RE, FE and GMM estimators
Vadlamannati (2012)	101 developing countries	1997-2007	Multilevel mixed-effects linear instrumental variable approach
Al-Khoury and Abdul (2013)	16 MENA countries	1984-2011	FE and RE dynamic models
Hayakawa, Kimura and Le (2013)	89 countries (including 56 developing countries)	1985-2007	System GMM
Khan and Akbar (2013)	94 countries	1986-2009	One-way and two-way FE models
Rogmans and Ebbers (2013)	16 MENA countries	1987-2008	OLS
Anyanwu and Yameogo (2014)	53 African countries	1970-2010	GMM, OLS
Gobinda Goswami and Haider (2014)	146 OECD and non-OECD countries	1984-2009	Factor analysis, pooled OLS, FE models
Abbas and El Mosallamy (2016)	13 MENA countries	2006 -2013	Cross-section random effect
Nelson, Sooreea and Gokcek (2016)	30 countries	1984-2012	OLS
Bouchoucha and Benammou (2020)	41 African countries	1996-2013	FE, RE and system GMM
<i>Country-specific Studies</i>			
Bénassy-Quéré, Coupet and Mayer (2007)	US FDI stock to 52 countries	1985-2000	Gravity model
Zheng (2009)	China and India	1984-2002 (for China) 1991-2002 (for India)	Pooled OLS and RE model
Sanfilippo (2010)	Chinese outward FDI to 41 African countries	1998-2007	FE and SUR estimator
Jiménez (2011)	FDI flow from Spain, France, and Italy to 14 CEE and North African countries	1999-2006	GMM
Kolstad and Wüig (2012)	Chinese outward FDI	2003-2006	
Nasreen and Anwar, (2014)	Pakistan	1981-2012	ARDL
Asif, Majid, Yasir and Ali (2018)	Pakistan	1984-2013	ARDL

### Data and Empirical Methodology

The purpose of the present investigation is to expose the relationship between political risks and foreign direct investment for 6 North Africa countries (Algeria, Egypt, Libya, Morocco, Sudan, and Tunisia) using annual data over the period of 1996-2014. The selection of countries and time periods is based on the availability of data. The data for political risks is collected from the International Country Risk Guide (ICRG) created by Political Risk Services (PRS). As it is displayed in the related literature, the ICRG data set, which is a commonly used metric measuring political risk, is composed of a number of variables. This study employed a composite measure of Political Risk in order to avoid the problem of multicollinearity

The ICRG index consists of multiple components such as “government stability, socioeconomic conditions, investment profile, internal conflict, external conflict, corruption, military in politics, religion in politics, law and order, ethnic tensions, democratic accountability and bureaucracy quality” (ICRG, 2015). As high values of ICRG political risk variables refer to a good performance, this variable is expected to have be positive. In addition to the above-mentioned variables, some other variables assumed to be relevant to account for FDI flows are also included in the analysis. The first of these variables is trade openness, as a determinant for FDI inflows, shown by the share of foreign trade in Gross Domestic Production. Trade openness is an important determinant in the investment decision. It has been well articulated in FDI literature that more trade-open countries following policies geared towards trade liberalization are more likely to attract investment (see. Liargovas and Skandalis, 2012). The second variable influencing FDI is market size which acts as a significant stimulus for foreign direct investment since the volume of domestic consumption is critical for foreign investors to increase their profits (Asideu 2006; Bouchoucha, & Benammou, 2020; Chakrabarti, 2001). Market size is determined by GDP per capita of the sample countries. Although some studies opted for absolute GDP, Chakrabarti (2001, p. 98) argued that GDP per capita is a more pertinent measure by taking into account income level. The third control variable is the consumer price index. This is included so as to measure the level of macroeconomic stability (Asideu, 2006; Mohamed, & Sidiropoulos, 2010; Sanfilippo, 2010; Mina, 2012; Bouchoucha, & Benammou, 2020).

All the control variables employed for the purpose of this study, Trade Openness, Gross Domestic Per Capita Income and Consumer Price Index, are obtained from World Development Indicators.

**Table 2.** *Definition of the Variables and Data Sources*

Variable	Definition of the Variable	Data Source
$LFDI_{j,t}$	Foreign direct investment, net inflows (% of GDP)	World Bank, World Development Indicators Database.
$LGDP_{j,t}$	GDP per capita (constant 2010 US\$)	World Bank, World Development Indicators Database.
$LCPI_{j,t}$	Consumer price index (2010 = 100)	World Bank, World Development Indicators Database.
$LTRADE_{j,t}$	The sum of export and imports of goods and services (% of GDP)	World Bank, World Development Indicators Database.
$LPOLRISK_{j,t}$	Political risk index (Risk ratings range from a high of 100 (least risk) to a low of 0 (highest risk).	The PRS Group, ICRG Dataset.

To illustrate the theoretical relationship between political risks and FDI, we have estimated the following linear model:

$$LFDI_{it} = \alpha_0 + \alpha_1 LGDP_{it} + \alpha_2 LCPI_{it} + \alpha_3 LTRADE_{it} + \alpha_4 LPOLRISK_{it} + u_{it} \quad (1)$$

In Equation 1,  $i$  indicates cross-section units,  $t$  denotes time and  $u_{it}$  is the error term..  $\alpha_1, \alpha_2, \alpha_3$  and  $\alpha_4$  are long-run parameters of the variables. Where  $LFDI$  is Foreign Direct Investment inflows;  $LTRADE$  is the share of export and import to GDP;  $LGDP$  is the gross domestic product per capita;  $LCPI$  is consumer price index, and  $LPOLRISK$  is political risk drawn from ICRG data set.



Panel data contain observations obtained over multiple time periods for economic units such as firms, sectors and individuals. Consequently, panel data broadens time series analysis by adding a cross-sectional dimension. Moreover, in comparison to the above-mentioned analysis, panel data analysis has certain advantages in overcoming individual heterogeneity (Baltagi, 2005, p. 4). Panel analysis consists of multiple steps. In this analysis, (a) stationarity of the series will be tested with the fitting unit root tests, (b) long-term relationship between series is determined by co-integration analysis, (c) long term estimators will be analyzed (d) lastly, causality relationship between series will be investigated.

**Preliminary and Unit Root Tests**

Prior to conducting any type of test, stationarity of series needs to be examined. However, to figure out fitting, unit root tests, cross-sectional dependency and heterogeneity need to be taken into account. Cross-sectional dependence is tested utilizing Breusch and Pagan (1980) Lagrange Multiplier Statistics ( $CD_{LM1}$ ) and Pesaran (2004)  $CD_{LM2}$  test statistics.  $CD_{LM1}$  and  $CD_{LM2}$  may use when  $T > N$ , whereas developed by Pesaran (2004) is used when  $N > T$  (Nazlıođlu, Lebe & Kayhan, 2011, p. 6618).

Another issue that needs to be dealt is slope homogeneity tests in the series. Based on Mark, Ogaki & Sul (2005), panel heterogeneity is detected by using seemingly unrelated regression (SUR) analysis (Nazlıođlu, Lebe & Kayhan, 2011, p. 6618). Pesaran and Yamagata (2008) developed two statistical calculations as  $\tilde{\Delta}$  and  $\tilde{\Delta}_{adj}$ . in order to make a decision regarding the homogeneity and heterogeneity of the long-term coefficients of the countries in the panel. In panels with a high number of countries,  $\tilde{\Delta}$  statistics give more significant results, while  $\tilde{\Delta}_{adj}$ . statistics yields more significant results in small panels. This method tests the homogeneity of slope coefficients in the null hypothesis and heterogeneity in the alternative hypothesis. In order to accept the null hypothesis and to deduce that the panel has a homogeneous structure, the probability value must be higher than 0.01 at the 99 percent significance level.

**Table 3.** *Cross-Sectional Dependence and Homogeneity Tests Results*

Test	Statistics	Probability
$CD_{LM1}$ (Breusch and Pagan, 1980)	19.640	0.18
$CD_{LM2}$ (Pesaran, 2004)	0.847	0.19
$CD$ (Pesaran, 2004)	1.826	0.03
$\tilde{\Delta}$ (Pesaran and Yamagata, 2008)	3.585	0.00
$\tilde{\Delta}_{adj}$ . (Pesaran and Yamagata, 2008)	4.285	0.00

Table 3 reports the cross-sectional dependency and heterogeneity test results. Since the number of countries within the scope of this study is smaller than the examined time period, it is more favourable to interpret the  $CD_{LM2}$  statistics (Pesaran, 2004). When the cross-sectional dependence test results are examined from Table 2, it is seen that the null hypothesis of cross-sectional independence is accepted. Delta test results, on the other hand, revealed that the null hypothesis is rejected and the panel has a heterogeneous structure. These findings show that the sample used in the study has a heterogeneous structure and there is cross-sectional independence. Thus, in the following stages, the analysis will be carried out with first-generation methods that yield good results in the presence of cross-sectional independence.

Accordingly, given the presence of heterogeneity, selected panel unit root tests sensitive to heterogeneity are applied to discover the integration order of the series. Therefore, Im et al. (2003), Maddala and Wu (1999), and Choi (2001) tests, all of which are based on heterogeneity assumption, are utilized. Table 4 shows the results of unit root tests for the level and first differenced series of the variables.

Table 4. Unit Root Tests Results

Variables	Im et al. (2003)		Maddala and Wu (1999)		Choi (2001)	
	Constant	Constant and trend	Constant	Constant and trend	Constant	Constant and trend
<i>LFDI</i>	-2.85***	-0.58	28.82***	17.56	26.87***	23.74
<i>LGDP</i>	0.85	0.54	8.09	10.21	11.25	12.38
<i>LCPI</i>	7.38	3.22	1.54	4.23	0.63	2.00
<i>LTRADE</i>	0.17	0.86	9.93	10.71	6.14	9.50
<i>LPOLRISK</i>	2.03	1.83	4.07	4.02	4.56	3.44
$\Delta LFDI$	-5.09***	-4.10***	48.13***	38.16***	96.29***	91.69***
$\Delta LGDP$	-8.06***	-3.30***	74.78***	35.44***	77.24***	56.07***
$\Delta LCPI$	-2.37***	-3.38***	29.07***	31.78***	32.71***	48.05***
$\Delta LTRADE$	-6.44***	-5.82***	58.43***	50.05***	78.63***	81.98***
$\Delta LPOLRISK$	-4.64***	-6.71***	44.74***	58.78***	52.80***	65.37***

Note: \*\*\*, \*\* and \* indicate statistical significance at the 1, 5 and 10 percent level, respectively.  $\Delta$  is the first difference operator.

Table 4 indicates that foreign direct investments (*LFDI*) are stationary at level according to the constant form of Im et al. (2003), Maddala and Wu (1999), and Choi (2001) tests. However, this variable has a unit root at level in the constant-trend model of these three unit root tests. It was revealed that all the other variables that will be used in the econometric application stage of the study included unit root at level in all the models of Im et al. (2003), Maddala and Wu (1999), and Choi (2001) tests. When all the variables are subjected to unit root tests again after taking their first difference, it was observed that each series became stationary. This allows us to move to the next step, that is panel cointegration analysis.

### Panel Cointegration Analysis

In order to investigate the long-run relationship between political risks and foreign direct investment, the panel cointegration tests suggested by Pedroni (1999, 2004) and Maddala and Wu (1999) are performed for this analysis. Pedroni (1999) test results offer seven panel-cointegration statistics. Whilst four of these statistics stem from the within-dimension tests, three of them, on the other hand, are based on the between-dimension. Pedroni proposed four within dimension statistics: panel  $\nu$ , panel rho, panel PP and panel ADF-statistic. Group rho, Group PP and Group ADF are statistics based on between dimensions.

$H_0$ : There is no cointegration relationship between variables

$H_1$ : There is cointegration relationship between variables

The Pedroni method tests that there is no long-term relationship in any of the countries in the null hypothesis. Among the seven results obtained from this method, if the null hypothesis of no cointegration is rejected through the group-rho statistics used for small panels and panel  $\nu$  statistics used for large panels, reliable data is reached (Pedroni, 2004, p. 614-615). Furthermore, if the probability values for the seven statistics obtained from this method are smaller than 0.05 at the 95 percent significance level, the null hypothesis is rejected and it will be possible to deduce that there is a long-term relationship. Table 4 shows the Pedroni cointegration test results for Equation 1.

Table 5. Pedroni Co-integration Test Results

	Constant	Constant and Trend
Panel $\nu$	-0.13	-1.37
Panel rho	0.44	1.42
Panel pp	-3.09***	-2.34***
Panel adf	-3.16***	-2.46***
Group rho	1.30	2.16
Group pp	-4.22***	-3.32***
Group adf	-4.11***	-3.65***

Note: \*\*\*, \*\* and \* indicate statistical significance at the 1, 5 and 10 percent level, respectively.

Table 5 shows that in four of the seven results obtained from the constant and constant-trend forms of Equation 1, the null hypothesis of no long-term relationship was strongly rejected. Whereas Pedroni (1999) is based on Engle-Granger (1987), Maddala and Wu (1999) developed the Johansen-Fisher panel cointegration test based on the Johansen (1988) cointegration test. In addition, Fisher type cointegration, a modified sort of Johansen cointegration test, is used as a robustness check to account for determining the long-run relationship between selected variables. Moreover, the Fisher cointegration test does not assume homogeneity in the coefficients.

**Table 6.** *Johansen-Fisher Co-integration Test Results*

Null Hypothesis	Fisher Test Trace Statistics	Fisher Test Max-eigen Statistics
$r = 0$	168.0 ***	107.3***
$r \leq 1$	93.93 ***	55.57 ***
$r \leq 2$	50.72 ***	35.51 ***
$r \leq 3$	27.94	24.15
$r \leq 4$	22.76	22.76

Note: Schwarz Information Criterion is used to obtain optimal lag length. \*\*\*indicates statistical significance at the 1 percent level.

When Johansen-Fisher cointegration test results, given in Table 6, are examined, the null hypothesis, which states that there are maximum two long-term equations between the variables in Equation 1, is rejected at the 99 percent confidence level according to both trace statistics and max-eigen statistics. Based on this result, at least two equations account for the long-term relationship.

In summary, the examination of the results obtained from both the Pedroni method and Johansen-Fisher method indicates that a long-term relationship exists among the variables in Equation 1. Following this result, parameter estimation stage was initiated in order to obtain the long-term coefficients of the variables. The overall results support the presence of cointegrating relations between variables, which makes long-term estimations possible for the next step.

**Long-Run Panel Estimations**

In order to estimate the long-run relationship, FMOLS, proposed by Phillips and Hansen (1990), is utilized. Since FMOLS is an estimator more suited to small sample sizes (Erdem, Nazlıoğlu & Erdem, 2010, p. 541), this study prefers to take advantage of FMOLS in the forthcoming analysis.

**Table 7.** *Results for FMOLS Estimation*

Country	LGDPPC	LCPI	LTRADE	LPOLRISK
Algeria	2.075	-1.065	0.292	-0.213
Egypt	-5.560	3.183	2.510***	5.665
Libya	-0.575	1.407*	0.780***	8.153***
Morocco	7.396*	-10.40	1.058	4.760**
Sudan	-2.714**	0.730	-0.078	3.030***
Tunus	-.430	3.504	1.351	7.257
PANEL	-0.301	-0.441	0.985***	4.77***

Note: \*\*\*, \*\* and \* indicate statistical significance at the 1, 5 and 10 percent level, respectively.

According to the FMOLS estimation results, given in Table 7, the political risk variable positively affects foreign direct investment in five of the six countries in the sample. However, this positive effect is statistically significant only in Libya, Morocco, and Sudan. When the political risk variable gets a high value, it points to good performance, and thus this situation is compatible with expectations. Although the variable of political risk has a negative sign in Algeria, this result is not statistically significant. The LTRADE variable, which represents the integration of the country with the world, is positive in five of the six countries. However, these findings are significant only for Egypt and Libya at the 99 percent significance level. It is difficult to say that a general conclusion can be made by considering the coefficients of per capita income level. The statistically significant results for this variable are positive in Morocco and negative in Sudan. Furthermore, the results for the whole panel show that political risk and trade openness variables have a coefficient with a significant positive sign at the 99 percent significance

level.

**Causality Between Variables**

Having identified that there is a long term relation between variables, the next step is to check the causality analysis among variables. Engle and Granger (1987) argued that if two series are integrated of order (1) and cointegrated, it emerges a possibility of a causal relationship. In the previous stages, co-integration was investigated through Pedroni and Johansen Fisher methods, whereas the long term coefficient is obtained by taking advantage of the FMOLS estimator. The disequilibrium term is calculated based on Equation 1 is showed below.

$$\hat{\epsilon}_{it} = LFDI_{it} - \hat{\alpha}_0 - \hat{\alpha}_1 LGDPPC_{it} - \hat{\alpha}_2 LCPI_{it} - \hat{\alpha}_3 LTRADE_{it} - \hat{\alpha}_4 LPOLRISK_{it} \quad (2)$$

The VECM models, based on the two main variables of this research, foreign direct investment and political risks, are displayed in equation 3 and 4.

$$\Delta LFDI_{it} = \alpha_{1i} + \lambda_{1i} \hat{\epsilon}_{it-1} + \sum_{j=1}^K \varphi_{11ij} \Delta LFDI_{i,t-j} + \sum_{j=1}^K \varphi_{12ij} \Delta LPOLRISK_{i,t-j} + \epsilon_{1it} \quad (3)$$

$$\Delta LPOLRISK_{it} = \alpha_{2i} + \lambda_{2i} \hat{\epsilon}_{it-1} + \sum_{j=1}^K \varphi_{21ij} \Delta LPOLRISK_{i,t-j} + \sum_{j=1}^K \varphi_{22ij} \Delta LFDI_{i,t-j} + \epsilon_{2it} \quad (4)$$

Equations 3 and 4 are estimated for each country in the sample respectively. If the value of  $\lambda_1$  is different than 0, this indicates that there is a causal relationship from political risks to foreign direct investment. On the other hand, if the value of  $\lambda_2$  is different than 0, it can be interpreted that foreign direct investment is the cause of political risks in the long run. (Canning ve Pedroni, 2008, p. 512). In this study, the presence of causality between political risk and FDI is analyzed employing the Canning and Pedroni (2008) causality test which is a variant of Engle and Granger (1987). One of the advantages of this method is that it can be utilized in heterogeneous panels which allow for long term causality by taking into account the statistics of individual countries. To this end, group means and lambda statistics are calculated through which long term causality is investigated (Canning and Pedroni, 2008, p.517). Group means statistic, that is the mean of Lambda- Pearson statics ( $\lambda_i$ ) for each country having normal distribution, gives the causality for the whole panel. Group mean panel estimator is calculated through Equation 5 displayed below (Canning and Pedroni, 2008, p. 518; see also Özşahin ve Üçler, 2017, p.10-11).

$$\bar{t}_{\lambda 1} = N^{-1} \sum_{i=1}^N t_{\lambda 1i} \quad (5)$$

The Lambda-Pearson statistics on the other hand stems from the p values based on the individual t statics of each country. These statistics test the presence of long term causality by looking at Chi-square distribution 2N degrees of freedom (Canning and Pedroni, 2008, p.518-519; see also Özşahin ve Üçler, 2017, p. 10-11).

$$P_{\lambda 1} = -2 \sum_{i=1}^N \ln P_{\lambda 1i} \quad (6)$$

**Table 8.** Canning and Pedroni (2008) Causality Test Results

Country	<i>LPOLRISK</i> → <i>LFDI</i> $\lambda_1$	P-value	<i>LFDI</i> → <i>LPOLRISK</i> $\lambda_2$	P-value
Algeria	-1.342**	0.04	0.077	0.73
Egypt	-0.436*	0.06	-0.710	0.49
Libya	-0.558**	0.04	-0.797	0.44
Morocco	-0.312	0.28	-1.196	0.25
Sudan	-1.229	0.15	0.467	0.65
Tunisia	-0.806**	0.03	-0.592	0.56
PANEL	-0.781	0.29	0.014	0.39

Note: \*\*\*, \*\* and \* indicate the rejection of the null hypothesis of no causality at 1%, 5%, and 10% levels of significance, respectively.

The Canning and Pedroni (2008) causality test results based on Lambda- Pearson statistics in Table 8 demonstrate that the null hypothesis stating that political risks do not cause foreign direct investment inflows, is rejected in four of the six countries in the panel. In this regard, there is a causal relationship from political risks to FDI in Algeria, Libya and Tunisia at 95 percent and 90 percent significance in Egypt. As group means statistics are checked, the null hypothesis indicating that there is no causal relationship between political risks and FDI is not rejected. However, as the causal relationship is controlled for a relationship from foreign direct investment to political risks, both Group means and Lambda–Pearson statistics indicate that there is no causal relationship between these parameters.

### Conclusion

This paper primarily focuses on the nexus between political risks and FDI for six North African countries. The relevant literature indicates that political risks affect foreign direct investment through various avenues. Moreover, a voluminous body of analysis has been attempted to solve the empirical puzzle between political risk and FDI by utilizing multiple advanced methods. Despite the fact that there is abundant research on the issue, it is hard to say that there is a consensus on the relationship between these two variables. In addition to variations arising from conceptualizations, time periods and methods utilized, regional and sub-regional differences also play an important role in the literature surveyed. Moreover, most of the studies ignore the reverse causality relation between political risk and FDI, which might cause an endogeneity problem. In terms of methodology, on the other hand, this paper investigates this relationship for North African countries in the presence of cross-sectional dependence and slope homogeneity for the first time to the best of our knowledge. Rather than applying standard dynamic macro panel procedures, this analysis renders appropriate tests conducive to the presence of cross-sectional independence.

Our main results are as follows: First, our findings confirmed that the selected variables are co-integrated for a long-run relationship over the study period, 1996-2014. Second, according to FMOLS estimation results for heterogeneous co-integrating panels, political risk has a negative influence on foreign direct investment in five of the six countries in the sample. However, this effect is statistically significant only for three countries, Libya, Morocco and Sudan. These findings show that there is no clear-cut cause and effect relationship valid for all North African states. The causality analysis, on the other hand, reveals that, whereas there is no causal relationship for the whole panel, there is a causal relationship from political risks to FDI for Algeria, Egypt, Libya, and Tunisia. This means that four out of six countries are more sensitive in attracting FDI in the face of political risks. There is no causal relation flows from FDI to the political risk for any country. This finding, no doubt, indicates sub-regional and even country-specific idiosyncratic factors that may influence the political risks –FDI nexus.

### Ethical Declaration

In the writing process of the study titled “*The Nexus between Political Risks and Foreign Direct Investment: An Empirical Analysis for North African Countries*”, there were followed the scientific, ethical and the citation rules; was not made any falsification on the collected data and this study was not sent to any other academic media for evaluation.

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### TÜRKÇE GENİŞ ÖZET

Doğrudan yabancı yatırımlar, yurtiçi sermaye piyasalarında derinleşmenin düşük düzeyde olduğu gelişmekte olan ülkelerde yetersiz sermaye birikimi sorununa çözüm olarak görülmekte ve bu nedenle birçok ülkede ekonomik büyüme oranlarının yükseltilmesi amacıyla yabancı yatırımları özendirici politikalar hayata geçirilmektedir. De Mello (1997), Borensztein vd. (1998) ve Herzer (2012), ekonomik büyümenin devamlılığı için yurtiçi yatırımların yetersizliğini telafi edecek bir değişken olarak yabancı yatırımları görmektedir. Ekonomik gelişmişlik sürecinde kritik öneme sahip olduğu hususunda genel bir kabulün olduğu doğrudan yabancı yatırımların belirleyicilerin ne olduğu konusu ise bu kapsamda cevaplanması gereken önemli bir soru niteliğindedir.

1970'li yılları takiben doğrudan yabancı yatırım hacmi ve kurumsal kalite göstergeleri arasındaki ilişkiye ışık tutmayı amaçlayan çalışmaların sayısı ciddi bir artış sergilemiştir (bkz. North ve Thomas, 1973; North, 1990; Acemoglu, Johnson ve Robinson 2005). Bu çalışmalarda çoğunlukla kurumsal kalite ile doğrudan yabancı yatırımlar arasındaki ilişkiye vurgu yapılmış ve doğrudan yabancı yatırımcıların ülke seçiminde kurumsal kalitenin yüksek olduğu ülkeleri özellikleri tercih ettikleri ifade edilmiştir (Asiedu 2006, Busse ve Hefeker 2007, Ali, Fiess ve MacDonald 2010).

Kurumsal kalitenin ölçümünde birçok gösterge olmakla birlikte bu konuda yapılan çalışmaların ancak bir kısmı, özellikle politik riskleri dikkate almakta ve politik risklerin doğrudan yabancı yatırımlar ile ilişkisini araştırmaktadır. Öte yandan bölgesel farklılıkları dikkate alan çalışma sayısı ise çok daha azdır. Bu çalışma literatürdeki bu boşluğu doldurmak amacıyla Kuzey Afrika ülkelerinde politik risk ve doğrudan yabancı yatırım girişleri arasındaki ilişkiyi teorik ve ampirik açıdan incelemeyi amaçlamaktadır.

Kuzey Afrika ülkeleri, ekonomik gelişme sürecinde doğrudan yabancı yatırımlardan elde edilecek avantajlardan yararlanabilmek adına 1980'li yılların ortalarından itibaren liberalizasyon politikalarını hayata geçirmişlerdir. İlerleyen yıllarda sözkonusu ülkeler, bölgesel düzeyde entegrasyonu artırmak ve Avrupa Birliği ülkelerinden yabancı yatırım çekebilmek amacıyla Avrupa—Akdeniz Ortaklık anlaşması imzalanmıştır. Ancak tüm bu çabalara karşı, Kuzey Afrika ülkelerinde yaşanan siyasi krizler, iç çatışma ve terörizm gibi sorunlar nedeniyle doğrudan yabancı yatırım girişini artırmayı amaçlayan tüm bu girişimlerin başarısı sınırlı düzeyde kalmıştır. Özellikle politik riskler, Kuzey Afrika ülkelerinin doğrudan yabancı yatırım çekebilmesi önünde engel oluşturan en önemli faktörlerden biri olmuştur.

Bu çalışmada politik risk ve doğrudan yabancı yatırım girişi arasındaki ilişkiyi tespit etmek üzere altı Kuzey Afrika ülkesi incelenmiştir. 1996-2014 döneminde kesintisiz verisine ulaşılan Cezayir, Mısır, Libya, Fas, Sudan ve Tunus'a ait yıllık veriler ile ekonometrik analiz yapılmıştır. Politik risk değişkenine ait veriler, PRS Group tarafından yayınlanan ICRG (International Country Risk Guide) veri setinden derlenmiştir. Politik risk endeksi hükümet istikrarı, sosyoekonomik koşullar, yatırım profili, iç ve dış çatışma, yolsuzluk, siyasette ordu, dini gerginlik, yasa ve düzen, etnik gerginlik, demokratik hesap verilebilirlik ve bürokratik kalite bileşenlerinden oluşmaktadır. Politik risk değişkenine ait yüksek değerler, iyi performansla işaret ettiği için ekonometrik analiz sonucunda bu değişkenin pozitif işaret alması beklenmektedir. Tahmin edilecek



ekonometrik modelin tahmin gcn artırmak amacıyla dođrudan yabancı yatırımların önemli açıklayıcı deđiřkenlerinden olan  deđiřken daha modele dhl edilmiřtir. Bu deđiřkenlerden ilki, lkenin dıř dnyaya entegrasyon dzeyinin bir lt olarak ihracat ve ithalat toplamının GSYH'ya oranlanması ile hesaplanan ticari dıřa aıklıktır. Piyasa byklđnn bir lt olan kiři baři GSYH ve makroekonomik istikrarsızlıđın bir gstergesi olan tketic fiyat endeksi ise diđer kontrol deđiřkenlerdir. Ekonometrik analiz sonucunda kiři baři GSYH ve ticari dıřa aıklık deđiřkeninin pozitif, tketic fiyat endeksinin ise negatif deđer alması beklenmektedir.

Altı Kuzey Afrika lkesinin 1996-2014 dnemine ait yıllık verileri ile yapılacak analiz iin ileri panel veri analiz yntemlerinden yararlanılmıřtır. Panel veri analizleri, hem yatay kesit hem de zaman boyutunu incelemesi ynnle zaman serisi analizleri ve yatay kesit analizlerine kıyasla stnlđe sahiptir. Ekonometrik analiz ncesinde uzun dnem eđim katsayılarının homojenliđi Pesaran ve Yamagata (2008) homojenlik testi, yatay kesit bađımlılıđının varlıđı ise Breusch ve Pagan (1980), Pesaran (2004) yatay kesit bađımlılıđı yntemleri ile arařtırılmıřtır. Sonrasında ise homojenlik ve yatay kesit bađımlılıđı test sonuları dikkate alınarak sırasıyla birim kk testi, eřbtnleřme testi, katsayı tahmini ve nedensellik testi uygulanmıřtır.

Homojenlik testi ile panelde yer alan lkelerin heterojen yapıda olduđu ve lkeler arasında yatay kesit bađımlılıđının bulunmadıđı tespit edilmiřtir. Bu dođrultuda birinci nesil yntemler ile birim kk ve eřbtnleřme analizleri yapılmıřtır. Serilerin durađanlık mertebeleri Im vd. (2003), Maddala ve Wu (1999) ve Choi (2001) testleri ile kontrol edilmiř ve alıřmada kullanılan tm serilerin birinci farkında durađan oldukları belirlenmiřtir. Deđiřkenler arasında uzun dnem iliřkinin varlıđı Pedroni (1999) ve Johansen-Fisher panel koentegrasyon testi ile arařtırılmıřtır. İki eřbtnleřme yntemi sonucunda deđiřkenlerin uzun dnemde birlikte hareket ettiđi sonucuna ulařılmıř ve katsayı tahmini Phillips ve Hansen (1990) FMOLS yntemi ile elde edilmiřtir. Ulařılan bulgular politik risk dzeyindeki iyileřmenin dođrudan yabancı yatırım giriřini Libya, Fas ve Sudan'da pozitif ynde ve istatistiksel olarak anlamlı řekilde etkilediđini gstermiřtir. Politik risk ve dođrudan yabancı yatırım giriři arasındaki nedensellik iliřkisi Canning ve Pedroni (2008) nedensellik testi ile arařtırılmıřtır. Elde edilen bulgulara gre Cezayir, Libya ve Tunus'ta %95, Mısır'da ise %90 nem dzeyinde politik risklerden dođrudan yabancı yatırım giriřlerine dođru nedensellik iliřkisi mevcuttur.