Institutional quality and FDI inflows: an empirical investigation for Turkey

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2020

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Abstract

Foreign direct investment (FDI) inflows are fundamental and strong drivers of the global economic system. Mostly for the developing countries in several geographic region, the attraction of FDI is considered a catalyst for economic growth, under the condition that the recipient economies present institutional conditions that encourage foreign investors. The present study aims at providing empirical evidence and at investigating the impact of institutional quality on the amount of FDI inflows during 2002 – 2017, focusing on the case of Turkey. The country applied institutional reform programs and made significant efforts in order to attract more foreign investors. The present paper contributes to the existing knowledge since it is the first empirical research to study the impact of institutional quality indicators on the amount of FDI inflows in Turkey, using time series analysis, as well as panel data analysis in selected countries of the region. The study concludes that upgraded quality of the studied institutional indicators in Turkey, except for government effectiveness, during the specific time period is positively related to FDI inflows. Suggestions for future research and policy implications are discussed.

Keywords: Foreign direct investment, Institutional quality, Turkey, Case study, Time series analysis, panel data analysis

1. Introduction

A growing number of developing economies make significant efforts in order to attract more foreign investors and foreign capitals, which could contribute to the development process (Aurangzeb & Stegnos, 2014). FDI inflows are defined as the acquisition of capital or hare in a country by an investor based in a different country (World Trade Organization, 1996). Similarly, Kindleberger (1969) defined FDI as the long – term capital flows, through which control of an enterprise is acquired and property is exchanged.

Actually, a favourable political and economic environment is more likely to attract FDI inflows in developing countries (Vidal & Correa, 2007). However, the political conditions and economic performance of an economy depend on the host country's institutions, which motivate the society (Buchanan et al, 2012; Falvey et al, 2012). Based on this assumption the paper focuses on institutional quality, which in a region or in a group of developing countries, is related to low corruption and strong rule of law (Barasa et al, 2017). Additionally, it includes other indicators, namely voice and accountability, political stability and absence of violence, government effectiveness and regulatory quality (Sabir et al, 2019). It is noted that the paper focuses on institutions in developing economies, considering that they are more likely to present poor institutional quality compared to developed countries (Dunning & Lundan, 2008; Kaufmann et al, 2011).

Furthermore, the case of Turkey is studied, influenced by the Turkish economy's increased research interest attributed to the country's geographical position, since it is neighboring to the Middle East economies, which are characterized by increased conflicts, and to the European countries. The case of Turkey is also interesting considering that that despite the country's poor institutional quality, the political instability, including the recent coup d' état, the applied structural reforms and the uncertain business environment, Turkey is listed second among the recipient economies in West Asia when regarding to FDI inflows in 2017.

Additionally, the research is motivated by the eclectic paradigm theory, according to which, among other factors, foreign investors' decisions are affected by the host economy's institutional quality (Dunning, 1988). Therefore, the purpose of the research is to empirically investigate the impact of institutional quality, taking into consideration traditional FDI determinants, on the amount of FDI inflows in Turkey during 2002 – 2017.

Several empirical previous researches also investigated the case of FDI inflows in Turkey. Nevertheless, Eren and Jimenez (2015) focused on corruption distance between Turkey and OECD countries, while Dumludag (2009) studied different indicators of institutional

quality compared to the ones used in the present paper, namely enforcement of contract law, functioning of judicial system, transparent, legal and regulatory framework, intellectual property rights etc. In addition, other researchers (Aslan & Okten, 2010; Tosun et al, 2014) only focused on specific indicators of institutional quality in Turkey and Erdal and Tatoglou (2002) studied the locational determinants of FDI in Turkey, but they did not take into consideration the institutional quality. Therefore, the contribution of the research is proven by the fact that, to our knowledge and through conducting an extended literature review on previous empirical studies, it is the first effort to empirically investigate the impact of institutional quality indicators on the FDI inflows of Turkey using time series analysis and recent empirical data.

The research is structured as following: The theoretical background is presented in section 2, followed by the methodological approach in section 3. Section 4 includes discussion of the empirical findings, suggestions for future research and policy implications, while the limitations of the present research are analyzed.

2. Theoretical framework

2.1. FDI and institutional quality in developing countries

FDI determinants in developing economies attract research interest so as to manage the uncertainty related to investing capital in a developing country (Heidenreich et al, 2015). Nevertheless, the majority of the studies focuses on economic or location factors, while it is interesting that attention on reforms that improve the investment environment, among which the improvement of the institutional quality, is paid mostly from 2005 till present (Kechagia & Metaxas, 2018). Additionally, foreign investors consider institutional framework and barriers when investing in emerging economies (Li & Filer, 2007; Cui et al, 2014).

Several indicators are used in order to define institutional quality. In the present paper the indicators used are voice and accountability (VA), political stability and absence of violence (PV), government effectiveness (GE), regulatory quality (RE), rule of law (RL) and control of Corruption (CC) since they are cited more often in the empirical literature of FDI and they are aligned with the world governance indicators (Kaufmann et al, 2011). The definitions of the indicators are presented in the Appendix (Table 3).

Previous empirical studies reached to the conclusion that in developing economies better institutional quality is more likely to attract FDI inflows as observed by several researchers (Fukumi & Nishijima, 2010; Mina, 2012; Masron & Nor, 2013; Gammoudi & Cherif, 2016a; Lucke & Eichler, 2016; Bbale & Nnyanzi, 2016; Bouchoucha & Benammou,

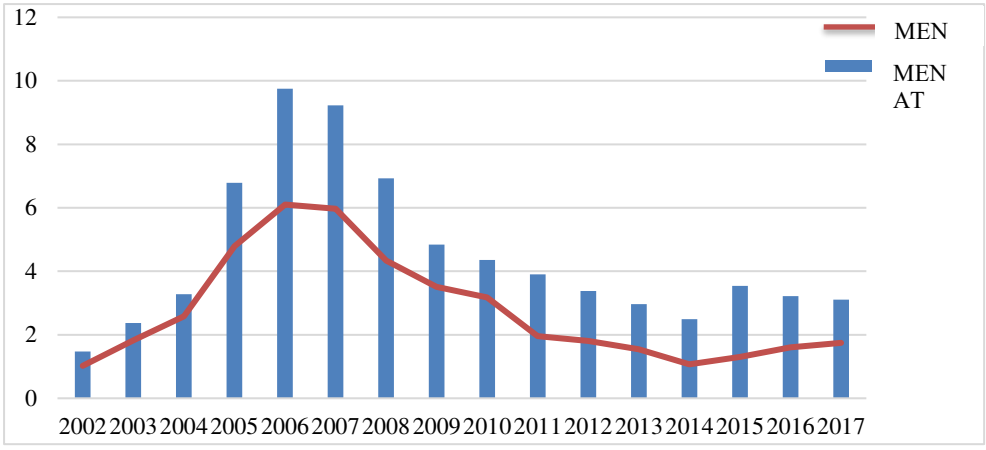
2017; Kurul & Yalta, 2017; Hayat, 2019; Minh, 2019; Sabir et al, 2019; Borojo & Yushi, 2020). Similarly, Tun et al (2012) observed that in 77 countries during 1981 – 2005 better institutional quality reduced uncertainty and cost of doing business, which both attracted more foreign investors, while Buchanan et al (2012) reached to similar findings for 164 economies from 1996 to 2006 and concluded that poor institutional quality increased the cost of FDI. Moreover, Carril – Caccia et al (2019) studied 182 developing and developed countries for the period 2003-2012 and argued that institutions boosted FDI inflows, while Nielsen et al (2017) observed that the more developed the institutions the larger the amount of FDI inflows attracted. Besides, a bidirectional relationship between FDI and institutional quality in 19 developing economies was observed by Huynh et al (2020) for the period 2002-2015.

Nevertheless, it is noted that solely certain institutional indicators affect FDI inflows (Kurul & Yalta, 2017). Based on this assumption, Bailey (2018) argued that FDI inflows are positively associated to political stability and rule of law, while foreign investors are discouraged by corruption. On the contrary, Asongu et al (2018) observed that institutions played an insignificant role in attracting FDI in the BRICS (Brazil, Russia, India, China, South Africa) and MINT (Mexico, Indonesia, Nigeria, Turkey) economies during 2001 – 2011. In line with these results, Ali et al (2010) concluded that institutional quality solely matters for FDI in services and manufacturing, but it is insignificant for the primary sector. Finally, in certain cases, indicators such as high corruption attract foreign investors who prefer corrupted regimes (Adam & Filippaios, 2007).

2.2. FDI in the MENAT countries

FDI inflows in the Middle Eastern and North African economies, including Turkey (MENAT), present significant interest because of the increased conflicts and political instability in the specific region, including the large scales of migrants and refuges over the past years (Helmy, 2013; Anyanwu et al, 2016; Guetat & Sridi, 2017). FDI inflows in the 8 MENAT countries from 1990 to 2016 have been related to economic growth and spillover effects, according to Jelili (2020). Despite the fact that the countries of the region are rich in natural resources, a reduction in FDI inflows is observed, mostly since 2007, as presented in Figure 1 and expressed in net FDI inflows, as a percentage of Gross Domestic Product (GDP).

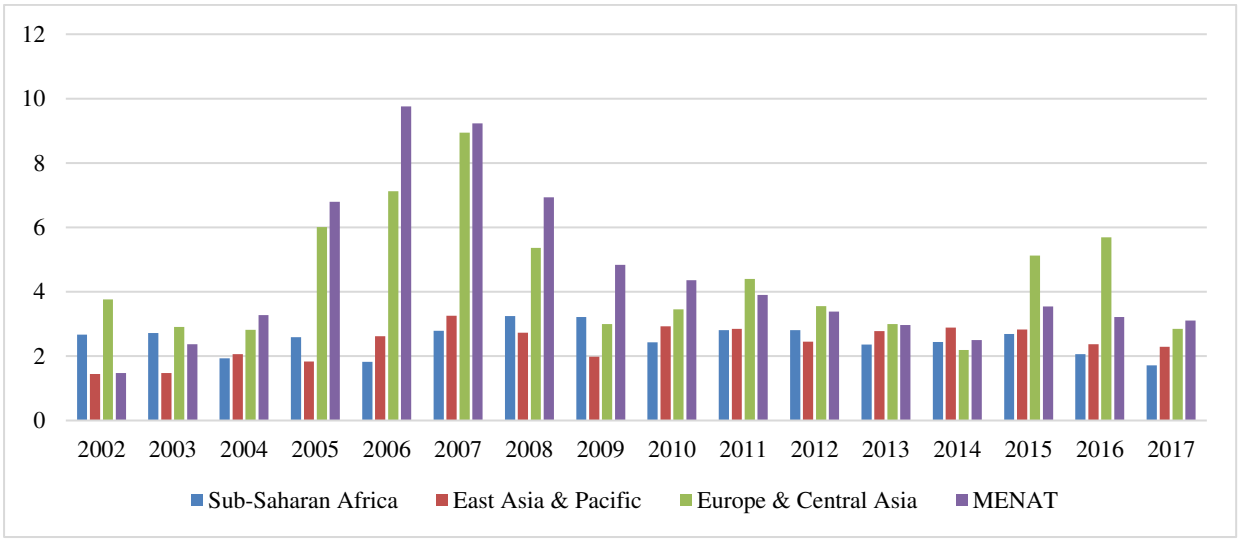
Figure 1: Net FDI inflows in the MENAT region (% GDP)



Source: World Bank Database, Author's calculations

An increase in FDI inflows (%GDP) in the MENAT region is observed from 2002 to 2006, which could be attributed to the reforms and political development in the countries of the region. Compared to other regions, the MENAT economies present relatively low FDI inflows over the past years. In particular, as presented in Figure 2, the MENAT economies attracted more FDI inflows compared to Sub – Saharan African, East – Asian and Pacific and European and Central Asian countries from 2004 until 2010. However, since 2011 European and Central Asian countries steadily attract more FDI inflows compared to the MENAT countries, except for the years 2014 and 2017. The decrease in the FDI inflows in the region is related to the civil conflicts in several MENAT countries, among which Syria, Libya and Yemen.

Figure 2: Net FDI inflows by region (%GDP)



Source: World Bank Database, Author's calculations

Empirical findings suggest that several macroeconomic characteristics affect FDI inflows in the MENAT region. According to Jabri et al (2013) FDI inflows in the region during 1970 – 2010 were determined from certain factors, such as trade openness, exchange rates, growth rate and economic instability. Similarly, Moosa (2009) also focused on the MENA region and concluded that, among other determinants, FDI inflows were positively related to high GDP growth rates and low country risk. Mohamed and Sidiropoulos (2010) reached to similar findings, arguing that FDI inflows in the MENAT region were determined by institutions, natural resources and the host economy's market size.

Finally, Okafor et al (2017) concluded that in 11 MENA economies during 2000 – 2012 the determinants of FDI inflows were GDP per capita, trade openness, inflation and control of corruption. It is noted that Naceur et al (2014) focused on financial development and observed that bureaucracy was a deterrent factor of FDI inflows in the region. Based on the above presented empirical results it is concluded that, among other traditional factors (e.g. GDP, trade openness and inflation) institutional factors are important determinants of FDI inflows in the MENAT economies. Motivated by these findings the following section focuses on the association between FDI and institutional quality in the MENAT region.

2.2.1. FDI and institutional quality in the MENAT region

Over the past years the MENAT economies proceeded to several reforms in order to improve their attractiveness to foreign investors. Galego and Caetano (2012) argued that institutional environment is a determinant factor of FDI inflows among the MENAT countries. Gazdar and Cherif (2015) highlighted the importance of the institutional framework of the MENAT economies in order to improve their investment profile and argued that the reduction of political instability would attract more foreign investors in the region. Similarly, Gammoudi and Cherif (2016b) also observed that institutional quality, along with financial development, attract FDI inflows in the MENAT region for the period 1995-2009.

According to Mina (2012) the countries of the region reduced expropriation risk associated to FDI through strengthening domestic institutions and through concluding bilateral agreements. Additionally, Méon and Sekkat (2004) observed that improved institutions in the MENAT economies were associated to higher FDI inflows over the period 1990-1999. On the contrary, poor institutional quality had a negative impact on the MENAT economies' economic activities worldwide. The researchers concluded that, despite the fact that institutional reforms

are often time consuming, policy makers should be oriented towards the improvement of institutions in the recipient economy in order to attract more FDI inflows.

Among the MENAT economies, high corruption is an institutional factor that discourages foreign investors (Schwarz, 2008; Okafor et al, 2017). In particular, Hakimi and Hamdi (2017) highlighted the importance of corruption in attracting FDI. Their study included 15 MENAT economies over the period 1985-2013 and concluded that corruption, which is listed among the indicators of institutional quality, was a deterrent factor of FDI inflows and relevant investment activities. Therefore, they suggested that the application of anti-corruption measures could attract more foreign investors. These findings are in accordance with the results of Helmy (2013), who studied 21 MENAT economies during 2003-2009 and concluded that corruption was the most important FDI determinant in the region.

When regarding to the case of Turkey, Abid and Bahloul (2011) observed that the country is considered the favourite FDI destination in the MENAT region, mostly for foreign investors from France, Italy, Germany and the United Kingdom. Nevertheless, the researchers argued that, in order for the MENAT economies to increase their attractiveness to multinational enterprises (MNEs) it is crucial that they improve the institutional framework. Therefore, the following section presents FDI inflows in Turkey so as to investigate the role of institutional quality in the specific country, which is analysed in the last section of the literature review.

2.2.1. FDI in Turkey

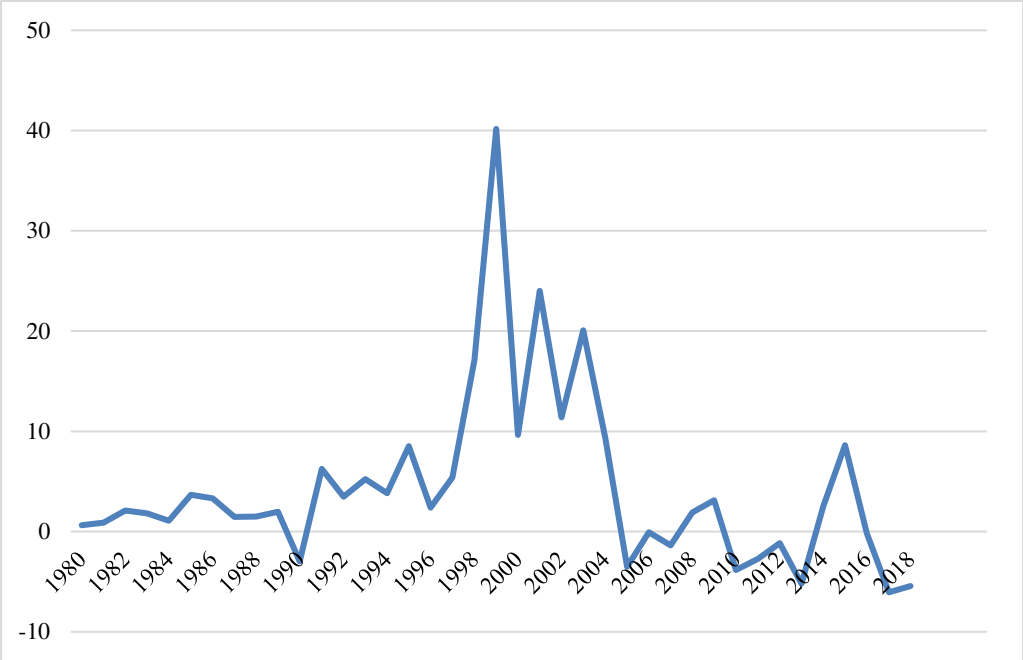
The country is located at the junction of Asia and Europe and thus the World Bank (2019) classifies Turkey among the European and Central Asian countries, as well as among the upper – middle income economies, ranking from $3,996 to $12,375 Gross National Income (GNI) per capita. Over the past years Turkey increased the country's attractiveness towards MNEs, considering that until 1980, the country faced significant difficulties in attracting FDI due to political, economic and institutional factors.

In particular, the Turkish government focused on trade agreements which would enable FDI liberalization and dismantle investment barriers (Altay, 2018). Since 1995, Turkey is a member of the World Trade Organization and proceeded to plurilateral agreements so as to abolish trade barriers (Togan, 2010). Additionally, Turkey, in collaboration with the International Monetary Fund (IMF) applied stabilization programs aiming at reducing inflation rates and attracting more FDI inflows (Hadjit & Moxon – Browne, 2005; Güllü et al, 2013).

Turkey also proceeded to liberalization in the country's telecommunication sector in order to attract more FDI and to adopt to the European Union (EU) relegations (Akdemir et al, 2007).

Nevertheless, considering that the Turkish economy remained fairly closed in the 80s and the several political and economic barriers, it is observed that the country did not manage to attract increased FDI inflows until the 20s, as presented in Graph 3, while since 2004 it is a candidate country to the European Union (UN). The country's investment climate was unfavorable and foreign investors preferred to invest their capitals in other MENAT countries.

Figure 3: Net FDI inflows in Turkey (% GDP)



Source: World Bank Database, Author's calculations

When regarding to the studied period, it is observed that Turkey attracted increased FDI inflows, as presented in Table 1.

Table 1: FDI inflows in Turkey

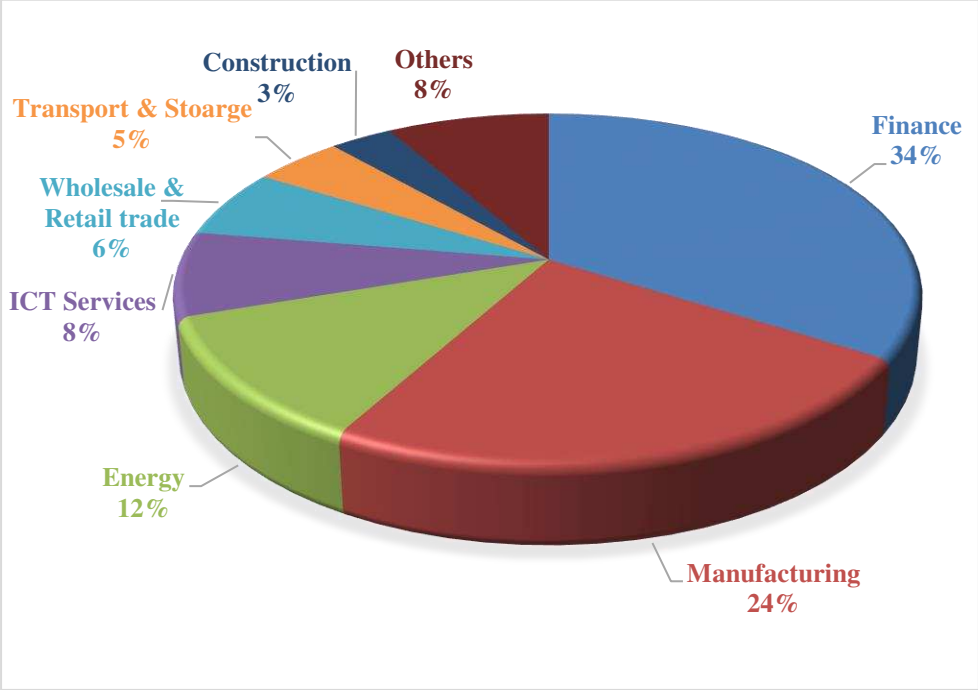
Year	Net FDI inflows (Current US$)	Net FDI inflows in Turkey (% GDP)
2002	1,08E+09	0,453806
2003	1,7E+09	0,545822
2004	2,79E+09	0,688017
2005	1E+10	2,000533
2006	2,02E+10	3,65348
2007	2,2E+10	3,2625

2008	1,99E+10	2,597157
2009	8,59E+09	1,331751
2010	9,1E+09	1,178777
2011	1,62E+10	1,943728
2012	1,37E+10	1,572572
2013	1,36E+10	1,426814
2014	1,33E+10	1,42766
2015	1,93E+10	2,241692
2016	1,4E+10	1,615104
2017	1,15E+10	1,355882

Source: World Bank database, Author's calculation.

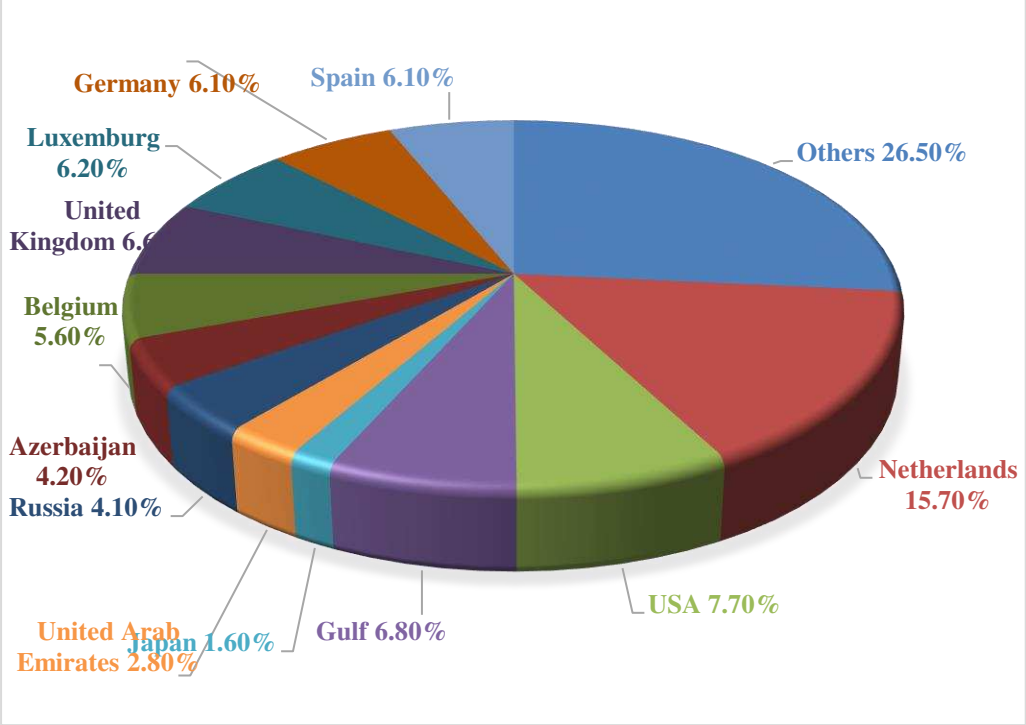
It is noted that Turkey attracts FDI in several sectors; nevertheless, manufacturing and finance absorb nowadays the majority of FDI inflows, as presented in Figure 4. Additionally, several developed and developing economies from different regions choose to invest their capitals in Turkey. However, most of the FDI inflows in the country originate from European and North American countries, as observed in Figure 5.

Figure 4: Sectoral distribution of FDI inflows in Turkey (2018)



Source: Central Bank of the Republic of Turkey (2019)

Figure 5: Top FDI investors in Turkey (2018)



Source: Central Bank of the Republic of Turkey (2019)

At present, Turkey provides several incentives to foreign investors. In particular, the Turkish government reduced bureaucracy, improved infrastructure, promoted Research and Development (R&D), established Free Trade Zones, Technology Development Zones etc. (Kosekahyaoglu, 2006; Ates & Bolukbas, 2011; Polat & Payashoglu, 2014). Apart from these factors, Turkey attracts FDI inflows due to its geographical region and market size (Tatoglu & Glaister, 1998; Dumludag, 2009) and made great reforms in order to abolish persisting controls and to apply an efficient economic liberalization strategy (Demir, 2004). Finally, Gürakar and Köksal (2016) observed that, in the post-World War period, Turkey focused on its institutional quality and applied reform programs in order to boost its economic growth and to reach higher development levels.

2.3. FDI and institutional quality in Turkey

Despite the fact that several studies focused on the determinants of FDI in Turkey, it is observed that the empirical findings of institutional quality as an FDI determinant factor are

limited. In particular, as observed in Table 2, Dumludag (2009) collected primary data in order to investigate the role of macroeconomic and certain institutional factors in attracting FDI in Turkey. The study concluded that, among the examined institutional factors, low level of corruption plays a crucial role in attracting FDI in Turkey.

Additionally, Eren and Jimenez (2015) studied corruption as an indicator of institutional quality and concluded that FDI inflows from OECD economies in Turkey were higher when performed from countries that present low differences in corruption level compared to Turkey. Similarly, Aslan and Okten (2010) observed an uni – directional causal relationship between FDI and democracy in Turkey, while Tosun et al (2014) concluded that corruption had negative short- and long-term impact on FDI inflows in Turkey. In line with the above presented empirical findings, Simet et al (2015) conducted a literature review and argued that the current corruption crisis had a negative influence on FDI inflows in Turkey. Öğrül and Eryiğit (2015) argued that the impact of institutional quality on FDI inflows depends on the sector of the production.

Table 2: Summary of empirical findings on FDI and institutional quality in Turkey

Authors	Period	Methodology	Type of Data	Data sources	Limitations
Dumludag (2009)	2006	Questionnaire survey	Primary, monthly	United Nations Conference on Trade and Development (UNCTAD) World Bank	Not mentioned.
Aslan & Okten (2010)	1970 – 2010	ADF unit root test, Phillips – Peron unit root test, Johansen Cointegration test, Error Correction model	Secondary, annual	Under secretariat of Treasury of Turkey, Freedom House	Not mentioned.
Tosun et al (2014)	1992 – 2010	Pesaran, Shin and Smith Cointegration test, Error Correction model, Granger causality test	Secondary, monthly	Central Bank of the Republic of Turkey, US Bureau of Labor Statistics, Turkish Statistics Foundation, Political Risk Services Group	Monthly GDP data was unavailable. Instead, industrial production index was used.

Eren & Jimenez (2015)	2002 – 2010	Panel data, Hausman test, Random effects model, Variance Inflation Factor	Secondary, annual	Organisation for Economic Co-operation and Development (OECD), UNCTAD, Centre d'Etudes Prospectives et d'Informations Internationales (CEPII), Heritage Foundation	Certain OECD countries (Chile, Estonia, Israel and Slovenia) were excluded due to data unavailability
Öğrül & Eryiğit (2015)	1995-2012	ADF unit root test, Phillips – Peron unit root test, Variance Inflation Factor	Secondary, annual	OECD, Central Bank of the Republic of Turkey, Turkish Statistical Institute, Transparency International, International Transport Forum	Not mentioned.

Therefore, previous studies focused solely on certain aspects of institutional quality in Turkey. On the contrary, the present research includes six variables of institutional quality on selected MENAT/MENA economies and on Turkey, which in the present paper are VA, PV, GE, RE, RL, CC.

3. Method, model and data

3.1. Data, sources and sample

The study focuses on the case of Turkey and on the FDI inflows during the period 2002-2017. Therefore, FDI inflows are studied as the dependent variable, while GDP, trade openness, inflation, VA, PV, GE, RE, RL, CC are used as explanatory ones. Variables description, sources and expected sign are presented in Table 3. Similarly, descriptive statistics are presented in Table 4.

Table 3: Data description, sources and expected signs

Variable	**Description**	**Database**	**Expected sign**
FDI inflows	FDI inflows in current prices (million US$)	UNCTAD	

GDP	GDP at purchase prices is estimated as the sum of gross value added by all resident producers in an economy plus product taxes and minus subsidies not included in the value of the final products.	World Bank	+
Trade openness	The sum of imports and exports of goods and services as a share of GDP.	World Bank	+
Inflation	The annual growth rate of the GDP implicit deflator shows the rate of price change in the economy as a whole. The variable is used as GDP deflator.	World Bank	-
VA	Represents perceptions of the extent to which citizens are able to participate in the selection of the host country's government, as well as freedom of expression, freedom of association, and free press and media.	Political Risk Services (PRS)	+
PV	Represents perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorist attacks.	PRS	+
GE	Represents perceptions of the quality of public and civil service, and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.	PRS	+
RE	Represents perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development and market-oriented strategies.	PRS	+
RL	Represents perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.	PRS	+
CC	Represents perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as 'capture' of the State by elites and private interests.	PRS	+

Table 4: Descriptive statistics for Turkey

	FDI	GDP	INFLATION	TRADE OPENNESS	GE	PV	CC	RL	RQ	VA
Mean	12,060.37	6.89E+11	11.034	48.794	0.5	0.57	0.41	0.64	0.56	0.56
Median	12,840.36	7.68E+11	7.962	48.135	0.5	0.55	0.42	0.62	0.59	0.52
Max	22,047	9.51E+11	37.574	54.122	0.5	0.72	0.42	0.75	0.64	0.79
Min	1,082	2.38E+11	5.401	45.437	0.5	0.49	0.33	0.5	0.45	0.38
Std Dev	6,436.68	2.26E+11	8.26	2.743	0.0	0.07	0.02	0.1	0.07	0.12
Obs	16	16	16	16	16	16	16	16	16	16

Additionally, for the above presented dependent and explanatory variables, descriptive statistics for the MENA and the MENAT region are presented in table 5.

Table 5: Descriptive statistics for selected countries of the MENAT and the MENA region

	MENAT region									
	FDI	**GDP**	**INFLATION**	**TRADE OPENNESS**	**GE**	**PV**	**CC**	**RL**	**RQ**	**VA**
Mean	4,464.93	2.20E+11	7.388	76.228	0.5	0.7	0.37	0.63	0.62	0.53
Median	1,917.46	1.05E+11	6.307	66.586	0.5	0.68	0.33	0.66	0.63	0.52
Max	22,004	9.51E+11	37.574	147.539	0.5	0.9	0.5	0.83	0.81	0.79
Min	-584	9.58E+11	-11.189	30.246	0.5	0.49	0.25	0.33	0.45	0.16
Std Dev	5,266.2	2.68E+11	1.296	0.645	0.0	0.11	0.08	0.13	0.1	0.15
Obs	80	80	80	80	80	80	80	80	80	80
	MENA region									
	FDI	**GDP**	**INFLATION**	**TRADE OPENNESS**	**GE**	**PV**	**CC**	**RL**	**RQ**	**VA**
Mean	2,566.07	1.02E+11	6.476	83.086	0.5	0.73	0.36	0.63	0.63	0.52
Median	1,649.89	5.22E+10	4.989	79.537	0.5	0.71	0.33	0.66	0.63	0.52
Max	11,578.1	3.33E+11	22.932	147.53	0.5	0.9	0.5	0.83	0.81	0.79
Min	-584	9.58E+09	-11.189	30.246	0.5	0.52	0.25	0.33	0.45	0.16
Std Dev	2,568.4	8.99E+10	5.958	30.367	0.0	0.1	0.08	0.13	0.11	0.15
Obs	64	64	64	64	64	64	64	64	64	64

It is noted that the certain countries of the MENA region are examined, based on the data availability. Therefore, the countries studies are Algeria, Egypt, Jordan and Tunisia.

3.2. The empirical model

Based on the eclectic paradigm of Dunning and the institutional theory of North (1990), FDI inflows are determined by the market size, the macroeconomic stability and the institutional quality.

Thus, the initial model is expressed as following:

$$FDI = f(\text{Market size, Macroeconomic Stability, Institutional quality}) \quad (1)$$

It is noted that FDI represents FDI inflows, GDP is used as a proxy for market size, inflation is used as a proxy for macroeconomic stability and six indicators are used in order to examine institutional quality, namely CC, PV, RL, RQ, VA, and GE. The above presented empirical model is extended through adding trade openness as an explanatory variable, as suggested in previous similar studied (Nguyen et al, 2018; Sabir et al, 2019).

Therefore, the model is expressed as following:

$$FDI = \beta_0 + \beta_1 GDP + \beta_2 TradeOpenness + \beta_3 Inflation + \beta_4 VA + \beta_5 RL + \beta_6 RQ + \beta_7 PV + \beta_8 CC + \beta 9RE + u_t \quad (2)$$

It is noted that Trade openness is estimated as the sum of exports and imports in Turkey as a ratio to GDP. The studied period extents from 2002 to 2017, it is defined upon available data, which both the explanatory and the dependent variables were obtained by World Bank.

3.3. The methodological approach

The methodological approach includes time series analysis for the case of Turkey and panel data analysis for selected MENA and MENAT economies. The model is transformed in logarithmic function in order to compress large values and to better interpret the coefficients and the empirical findings. As for the time series analysis, a correlation matrix is used in order to test for auto correlation among the studied variables, using the statistical package Eviews 10.0. Augmented Dickey Fuller (ADF) test is used in order to check for stationarity of the studied variables considering time series nature of the database. Ordinary Least Squares (OLS)

regression is applied so as to study the impact of the independent variables on FDI inflows in Turkey.

Similarly, as for the panel data analysis, a stepwise regression is applied so as to remove the highly correlated variables. The next step includes the application of the Hausman test in order to select between Random (RE) or Fixed Effects (FE), as well as Breusch – Pagan Lagrange Multiple so as to select between OLS and RE. After conducting the robustness tests, Feasible Generalized Least Squares (FGLS) are chosen so as to solve heteroscedasticity, cross – section dependence and autocorrelation. The results of the above described tests are available upon request.

3.4. Research hypotheses

The aim of the present study is to empirically study the impact of institutional quality on FDI inflows in Turkey over the period 2002 – 2017, considering other FDI determinants as well. In particular, the research hypotheses are expressed as following:

H_1: *MENAT economies could attract more FDI inflows though improving institutional quality*

Better institutions in several MENAT economies are expected to attract more foreign capitals and MNEs (Méon & Sekkat, 2004). On the contrary, certain factors related to institutional quality in the host economies, such as corruption, are expected to discourage FDI inflows (Schwarz, 2008; Helmy, 2013; Okafor et al, 2017; Hakimi & Hamdi, 2017).

H_2: *Improved institutional quality attracts FDI inflows in Turkey.*

Similar to the MENAT economies, better institutions in Turkey are expected to encourage FDI inflows. Considering the efforts made by the Turkish governments over the past decades so as to improve the investment climate through improving governance and institutions, it is argued that certain factors, mostly controlled corruption (Tosun et al, 2014; Simet et al, 2015; Eren & Jimenez, 2015), would improve the country's attractiveness towards foreign investors.

H_3: *Traditional FDI determinants influence FDI inflows in the MENAT economies.*

Explanatory variables are used in order to investigate their impact on FDI inflows in the MENAT region. The effect of GDP (Mahmoodi & Mahmoodi, 2016; Mehrara et al, 2010; Sabir

et, 2019 et al) and trade openness (Kurul & Yalta, 2017; Saidi et al, 2013; Sabir et al, 2019) on FDI inflows is expected to be positive, contrary to the effect of inflation (Tsaurai, 2018).

H_4: *Traditional FDI determinants affect FDI inflows in Turkey.*

The impact of the FDI determinants on FDI inflows in Turkey is expected to be similar to the selected MENAT economies. Therefore, GDP is expected to be positively related to FDI inflows (Dumludag, 2009; Tosun et al, 2014; Eren & Jimenez, 2015), as well as trade openness (Öğrül & Eryiğit, 2015), while inflation is expected to discourage FDI inflows in Turkey (Aslan & Okten, 2010).

4. Empirical results

The results of the ADF test and results of the OLS regression are presented in Table 6 and in Table 7 respectively.

Table 6: ADF test

Variables	**ADF**	**Critical values**		**Decision**
lnFDI	0.932 (0.018)	1% level	-2.728	Stationary at level
		5% level	1.966	
		10% level	-1.605	
lnGDP	2.515 (0.394)	1% level	-2.728	Stationary at 1st difference
		5% level	1.966	
		10% level	-1.605	
lnTrade	0.465 (0.802)	1% level	-2.728	Stationary at 1st difference
		5% level	1.966	
		10% level	-1.605	
lnInfla	-1.302 (0.168)	1% level	-2.74	Stationary at 1st difference
		5% level	-1.968	
		10% level	-1.604	
VA	-3.092 (0.005)	1% level	-2.771	Stationary at level
		5% level	-1.974	
		10% level	-1.602	
PV	-1.265 (0.18)	1% level	-2.728	Stationary at 1st difference
		5% level	-1.966	
		10% level	-1.605	
RL	-0.889 (0.314)	1% level	-2.728	Stationary at 1st difference
		5% level	-1.966	

		10% level	-1.605	
RQ	-0.826 (0.341)	1% level	-2.728	Stationary at 1st difference
		5% level	-1.966	
		10% level	-1.605	
GE	-0.882 (0.213)	1% level	-2.728	Stationary at 1st difference
		5% level	-1.966	
		10% level	-1.605	
CC	-1.389 (0.082)	1% level	-2.771	Stationary at level
		5% level	-1.974	
		10% level	-1.602	

Table 7: Time series OLS regression

	Turkey
Dependent variable: LnFDI	
lnGPD	3.236 (0.007)
lnTrade	0.057 (0.88)
lnInfla	-0.081 (0.042)
VA	2.621 (0.037)
RL	1.581 (0.376)
RQ	0.709 (0.328)
GE	-14.983 (0.042)
CC	17.833 (0.044)
PV	1.581 (0.096)
R2	0.866
Adjusted R2	0.813
Obs	16

Apart from the time series analysis the cases of the MENA and the MENAT countries are also studied using panel data analysis. It is noted that correlation matrixes are used in both cases to investigate the determinants of FDI in the specific regions.

Table 8: Panel estimations - FGLS

	Selected MENAT Countries	**Selected MENA Countries**
Dependent variable: LnFDI		
lnGPD	0.962 (0.000)	0.609 (0.001)
lnTrade	11.154 (0.000)	7.5758 (0.021)
lnInfla	-0.661 (0.092)	-1.993 (0.073)
VA		
RL		
RQ	1.097 (0.328)	1.069 (0.222)
GE	-173.527 (0.171)	-37.069 (0.004)
CC	1.28 (0.042)	0.443 (0.073)
PV	1.415 (0.091)	1.069 (0.022)
R2	0.7679	0.704
Adjusted R2	0.7406	0.634
DW	1.857	2.031
Obs	80	64

5. Discussion and suggestions

The case of FDI inflows and institutional quality of Turkey was the subject of this research. Turkey attracted the research interest because of the country's geographical location, the extended market size and the efforts of the Turkish government in order to attract FDI and to improve the investment climate, including the stabilization measures, the negotiations of the country with the EU and the liberalization programs. Nevertheless, among the FDI determinants in Turkey, it is observed that the role of institutional quality on attracting foreign investors is not studied extensively. The present study includes a literature review on empirical studies of

FDI and institutional quality in group of countries and in the case of Turkey, as well as panel data and time series analysis among FDI inflows, institutional factors and other FDI determinants.

When regarding to other FDI determinants, it is observed that the coefficient of GDP is positive and statistically significant in Turkey, in selected MENA and MENAT countries, as observed by previous researches (Mahmoodi & Mahmoodi, 2016; Mehrara et al, 2010; Sabir et, 2019 et al.). Similarly, it is observed that inflation is negatively related to FDI inflows in the studied group of economies and in Turkey as well, which is in accordance with the results of Sabir et (2019). On the contrary, Tsaurai (2018) observed that there is a positive association between FDI inflows and inflation; nevertheless, the researcher highlighted that the variable was statistically insignificant. It is also concluded that trade openness attracts FDI inflows, as proposed by Kurul and Yalta (2017), Saidi et al (2013) and Sabir et al (2019). Therefore, the third and the fourth research hypotheses (H_3 and H_4 respectively) are accepted.

As for the institutional factors of Turkey, it is observed that all the studied components of institutional quality are positively related to FDI inflows, except for the GE. Similarly, it is observed that there is a negative association between FDI and GE in selected MENA and MENAT countries; nevertheless, in the specific economies VA and RL were dropped out by the stepwise regression.

Kurul and Yalta (2017) also concluded to a positive association between FDI and CC. Similar to the findings of the present research, Anwar and Afza (2014), also observed a positive impact of CC, PV, RL and RQ on FDI inflow. On the contrary, the findings of the study are not in line with the results of Gangi and Abdulrazak (2012), who observed a negative association between FDI inflows and VA. However, the researchers also observed a positive interaction between FDI and RL, a positive impact of RQ on FDI and a positive relation between FDI and CC.

On the contrary, Sabir et al (2019) reached to different findings and argued that RQ does not affect FDI inflows in the developing countries, while Gangi and Abdulrazak (2012) observed that there is a negative association between FDI and PV and a positive association between FDI and GE. Finally, the findings are in line with the results of Kalemli – Ozcan et al (2016) who argued that Turkey should improve the RL in order to attract more foreign investors, while Egger and Winner (2005) in a sample of 73 developed and developing economies, including Turkey, observed that corruption was a stimulus for foreign investors over the period 1995-1999. It is thus argued that the first and the second research hypotheses

(H_1 and H_2 respectively) are partially accepted, considering that among the components of institutional quality, the present study concludes to a negative association between FDI and GE in Turkey and in selected MENA/MENAT economies.

Nevertheless, it is noted that the present research is subjected to certain limitations. Firstly, the study focuses on the case of Turkey and thus findings could not be generalized to other developing countries, while data for certain MENA economies was available. Secondly, solely total FDI inflows are examined. Consequently, there is no discrimination neither between horizontal and vertical FDI, nor among market – seeking, resource – seeking, efficiency – seeking and strategic asset – seeking FDI (Dunning, 1993). Thirdly, another limitation of the study is related to the number of observations; however, during the research there was available annual data for institutional quality solely for the time period 2002-2017. It is noted that relative studies also defined the number of observations and time span for both developed and developing economies based on data availability (Daniele & & Ugo, 2011; Ahmad & Ahmed, 2014; Shah et al, 2016). Finally, the last limitation is related to the difficulty in measuring institutional quality. Data for institutional quality is collected by the World Bank considering that data from other sources, such as the International Country Risk Guide (ICRG) was not available by the author.

Future studies could be oriented towards investigating non – traditional or emerging FDI determinants, as classified by UNCTAD (1998), to which little attention is paid until present, such as the forms of globalization and to include time or region dummy variables. Based on the findings of Sabir et al (2019), institutional quality is more important in attracting FDI in developed rather than in developing economies. It would thus be interesting to compare the role of institutional quality between Turkey and a developed country of the region or among Turkey and other developing economies in the MENAT region. The impact of social events, such as the recent coup d' état, could also be studied. Additionally, it would be interesting to consider the role of the EU Accession on achieving democratization, stability and improvement of the institutional quality which, according to Turhan (2016), it is a sui generis case.

Finally, future researches to extend beyond FDI so as to investigate the impact of institutional quality on remittances in Turkey. It is noted that FDI and remittances are the most important sources of foreign inflows in MENAT region, according to Guerat and Sridi (2017). Therefore, a future research could focus on institutional quality in Turkey and on remittances as a source of foreign capital inflows, instead of FDI. Apart from institutional quality, it would

be interesting to investigate the role of institutional affinity between Turkey and other group of countries, as suggested by Shukla and Cantwell (2018).

Certain policy implications derive from the present research. Firstly, considering the positive relationship between trade openness and FDI, it is suggested that the recipient countries abolish trade restrictions and barriers and strengthen anti-regulations. Secondly, it is suggested that the stability of the Turkish public institutions should be enhanced so as to encourage foreign investors and multinational companies.

In conclusion, it is argued that a stable and reliable institutional framework would encourage foreign investors and attract more FDI inflows in Turkey. It is suggested that policy makers in the country should re-consider the importance of the institutional quality indicators that prevent the attraction of FDI inflows. As suggested by Surdu et al (2018) institutional environment of recipient economies regulates the behaviour of the MNEs and reduces transaction costs. Therefore, the present study concludes that governmental policies should be oriented towards the improvement of the specific indicators so as to achieve economic growth through attracting more FDI inflows.

Finally, it is observed that it is crucial for Turkey to improve institutional quality, considering that better institutions are related to reduced transaction costs, which are considered by foreign investors when investing abroad. On the contrary, as also suggested by Dunning (2004), poor institutions could discourage MNES. In summary, it is crucial that corruption and government effectiveness should be tackled appropriately, public awareness towards these indicators should be improved and it would be useful that the aims of the governmental policies are often evaluated and re-considered so as to establish a stable political environment, characterized by public institutions of high quality, and to exploit the advantaged of Turkey.

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