


Political Risk and Foreign Direct Investment in Tunisia: The Case of the Services Sector 2004-2016

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ABSTRACT

Political risk factors have been considered as important factors which impact the foreign direct investment (FDI). But, the relationship between the political risk and FDI still not highly covered as expected. In this context, it is crucial to measure the political risk factors impact on the FDI especially for the Arab Spring countries which embraced radical political change after the revolution in 2011. This article aims to investigate the relationship between political risk and the FDI in Tunisia for the case of service sectors. The research is based on aggregate variables that represent six pillars of Governance Indicators. The data was extracted from the Worldwide Governance and the Tunisian Central Bank websites, the data frequency is yearly from 2004 to 2016. The research confirms that the political factors notably the government effectiveness and voice and accountability have significant impact on the FDI and on the FDI in the services sector.

KEYWORDS

Arab Spring, Correlation, FDI, Growth, Political Risk Indicators, Regression Model, Services Sector, Social Revolution, Tunisia

INTRODUCTION

Many researches showed that Foreign Direct Investment, FDI, is one of the principal approaches of “cross-border” investment and one of the most active drivers of economic growth for the host country. Indeed, it contributes to the process of capital formation notably in the emerging countries, particularly through the technologies’ exchange, the business “know-how” exchange (experiences exchange, advising etc.) and the balance of trade’s improving. Also, FDI maintain the employment growth via creating new employment opportunities and setting up new markets (as exports markets). The quality and the cost of the workforce in the host country, the political stability, the security and the rule of law are ones of the factors which can attract or discourage the FDI. So, the factors which may impact the FDI can be resumed into the size and the growth of the host country, as well, the political risk indicators.

The Tunisian economy depends on the services sector and manufacturing industries (such as textiles and car pieces) mainly oriented to exports. To maintain the Tunisian economy, the Tunisian authorities encouraged the FDI, to create new exports markets, to bring new technology, to improve the services sector notably the Tourism and to decrease the rate of the unemployed qualified workforce. Different policies were set up in favor of the FDI such as the investment code (last update was in 2009) and different agencies, such as the Foreign Investment Promotion Agency, were created to

DOI: 10.4018/IJSEM.2019070104

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give support and provide information to the foreigners willing to invest in Tunisia. Based on the last statistics in 2017, FDI presents 10% of productive investments, generates 1/3 of exports and over 15% of the total number of jobs.

However, starting from the global recession in 2008, then the country's socio-political revolution in December 2010, the FDI declined in Tunisia following the published statistics of the Tunisian Central Bank. The FDI decreased by almost 70.5% between 2006 (maximum FDI volume) and 2011 (minimum FDI volume and the year of the global change after revolution). After the Tunisian revolution, the economic situation collapsed, and the decrease of the FDI volumes after 2011 made the economic situation worse; losing investors, the sources of employment decreased (almost 182 foreign firms left Tunisia in 2011), the unemployment rate climbed (18.33% in 2011) and the growth rate plunged (-2% in 2011).

Accordingly, the main purpose of this paper consists on examining the impact of the political risk indicators on the growth of FDI in Tunisia.

The rest of the paper is divided into 5 sections. Section two is dedicated to the theoretical framework for FDI and the political risk factors. Section three outlines the importance of FDI in Tunisia and notably in the services sector. Section four describes the research methodology and the variables. Section five presents the regression results and summarize the interpretations. The last section, section six, sums up the main considerations and results of the research.

A THEORITICAL FRAMEWORK FOR FDI AND POLITICAL RISK INDICATORS

Foreign direct investment (FDI) could be defined as the direct investment equity flows in an economy. FDI is the sum of equity capital, reinvestment of earnings and other capital (IMF, 2003). It is defined in the World bank as a sort of cross-border investment related to an enterprise or an investor governing or impacting an investment in a foreign country (Worldbank, 2018). Ownership of 10 percent or more of the ordinary shares of voting stock is the criterion for determining the existence of a direct investment relationship (IMF, 2003). Farrell (2008) defined FDI as a set of capital, technology, management, and entrepreneurship, that allows a firm to be functional and to provide goods and services in a foreign market.

Therefore, FDI contributes directly and indirectly to the economic growth of the host countries (Almfrajia & Almsafir, 2013); (Roy & Berg, 2006) by easing the transfer of technological and business know-how (Romer, 1993), augmenting labor training, skill acquisition and diffusion, and the introduction of new managerial practices and organizational arrangements (De Mello, 1999). Solomon (2011) demonstrated that there is a significant relationship between inward FDI and growth and Choe (2003) showed that FDI Granger causes economic growth.

Theoretically, the two most important determinants of FDI are the size and growth of the host country and cost competitiveness (Khan & Ibne Akbar, 2013). Almfrajia & Almsafir (2013) summarized the main findings of the literature reviewed in terms of the determinants of the FDI.

Although, the influencing factors of FDI, have been extensively studied in the literature, one determinant of FDI has not been largely discussed so far which is the political risk. Stoychev (2013) showed that in the literature review, the political risk was defined as the probability of the financial losses imposed on the foreign investors in a political regime. Consequently, as provided in the works of Howell (2001), Brink (2004) and McKellar (2010), the political risks were explained only by the wars, the radical system changes such as the revolutions or the natural disasters.

As a matter of fact, the extent of the flow of foreign direct investment is highly dependent on the political atmosphere of the host country, it should be the case that political risk would have a negative impact on FDI, political instability increases uncertainty in the economic environment and discourages the foreign investments (see also (Aguilar et al., 2012) and the sources cited there).

The question to be raised here is how to measure the impact of the political risk on FDI?

This question has not been largely discussed in the literature due to the variability of the term. Click (2005) considered that political risk is the difference between the total country risks and the financial risks. Some researchers considered the corruption as a measure of political risk and estimated its subsequent impact on FDI. Corruption is defined by Getz and Volkema (2001) as the abuse of public roles and resources for private benefit or the misuse of public office for non-official ends. Habib & Zurawicki (2002), Wei (2000), Mauro (1995) and Freckleton et al. (2012) demonstrated that there is a negative impact of corruption on FDI. Moreover, (Habib & Zurawicki, 2002)' study revealed that the negative impact was due to the difference in corruption intensity between the host and home countries.

Most studies on the causal relationship between political risk and FDI concluded that high political risk discourages FDI in developing countries (Amal et al., 2010; Asiedu, 2006; Busmann, 2010; Osabutey & Okoro, 2015; Osabutey & Debrah, 2012).

However, Nye (1979) demonstrated that corruption has a positive impact on economic growth and development while Hines (1995) showed a non-significant relationship. See also (Khan & Ibne Akbar, 2013). Some studies observed that conditions of high political risk in developing countries attract multinational enterprises. Dar-Hsin et al. (2005), Janeba (2002) and Asiedu and Lien (2011) suggested that there is a positive relationship between political instability and FDI inflow. Dar-Hsin et al. (2005) argued that some high political risks cause host-country assets to be undervalued excessively to make them increasingly attractive to foreign investors.

International Country Risk Guide, published by the Political Risk Services, distributed separate financial, economic, and political ratings and identified twelve different political risk factors for different countries. Also, the Worldwide Governance Indicators, WGI, set a project which allows the estimation of six governance¹ indicators by country, from 1996 until 2016, the indicators will be defined later in this paper.

FDI IN THE TUNISIAN SERVICES SECTOR

The Tunisian economy was at a difficult starting point after the independence in 1956 as it was based on artisanal products and agricultural manufacturing. Therefore, it was indispensable to involve reformulations and to adopt policies to rebuild the country. Further details about the Tunisian economy after the independence were provided in (Ayadi & Mattoussi, 2016).

On a hand, the private sector was expanded to the quick-return manufacturing activities with lower capital-intensive, and non-sophisticated technologically. On the other hand, Bellin (1994) showed that the government controlled the industries defined as heavy or large and which are related also to the private sector.

As provided in (Ayadi & Mattoussi, 2016) research, the *infitâh* policy was implemented through laws regulating the foreign investments and trading to encourage the investors in the private sector to be more active and productive. Also, different institutions such as the Industrial Promotion Agency and the Export Promotion Centre were created to provide the technical support and guidelines to the foreign investors willing to invest in Tunisia. In the 1970s the economy was characterized by an offshore sector dominated by foreign investors and oriented towards exports targeting the external markets; an offshore sector that was shielded from competition and regulated by the government; a public sector composed of large firms, monopolized strategic sectors; and a private sector which mainly consisted on limited size business units, oriented to the simple assembling activities.

Trading in Tunisia was protectionist, limited to the local market until the mid of 1990s. However, the second half of the 1990s was characterized by including more opening strategies, through setting up a special legislative basis to attract more foreign investment. In addition, this legislative outlined the privatization in some sectors by liberalizing the local industries and allowed further collaborations with Europe. Moreover, the Tunisian authorities supported the foreign trade via different agreements for instance the Free Trade Agreement, the General Agreement on Tariffs and Trade in 1994, which

allowed Tunisia to be a part of the World Trade Organization and a member of the European Union Association Agreement in 1995 (Ayadi & Mattoussi, 2016).

In the 2000s, the economic policies offered conditions to boost the economic performance, develop its structure, maintain the competitiveness and to guarantee the openness requirements. Starting from 2002 until 2006, the gross domestic product growth was remarkable in Tunisia, also the investments, the FDI and exports volumes of goods and services increased. In addition, there were service sectors improvement and prominence of several emerging and promising industrial activities such as the mechanical and electric industries.

Some basic background data on Tunisia are presented in the following Table 1.

FDI was seen very advantageous to the Tunisian economy. Given the small size of the internal market, the scope for the diversification of national production was limited and substantial foreign trade was imperative (Bass, 2015). In 2008, export of goods and services (especially tourism) reached 56% of GDP. However, the share declined to reach 39.57% in 2016 because of the Global Financial Crisis, the Eurozone Crisis, and the Arab Spring movement (starting from Tunisia on December 2010), it still considerable for the Tunisian economy.

For many years, international observers considered Tunisia's political system as a stable system, as well as business-friendly. However, Investors' confidence declined dramatically during the Arab Spring and has not yet risen to pre-crisis level.

After a decline in early 2010s due to the global recession, the country's socio-political revolution and the crisis in the Eurozone, FDI saw a strong recovery. After having remained nearly flat between 2013 and in 2014, due to the deterioration of the country's security situation and the lack of medium and long-term economic visibility, FDI inflows started to rise in 2015 and rose to TND 2.06 billion in 2016 (4.6% y-o-y increase). (Tunisian Investment Agency)

Figure 1 shows the FDI changes by sector from 2004 to 2016.

The FDI in the services sector and in the Tourism and in the real estate sector reached the maximum in 2006, then the FDI volume decreased dramatically in 2007. After the social revolution in 2011, the FDI in the services remained low except in 2012. The FDI in the Energy sector reached the maximum in 2008. The FDI in the agriculture, telecommunications and Portfolio are not high in the whole period.

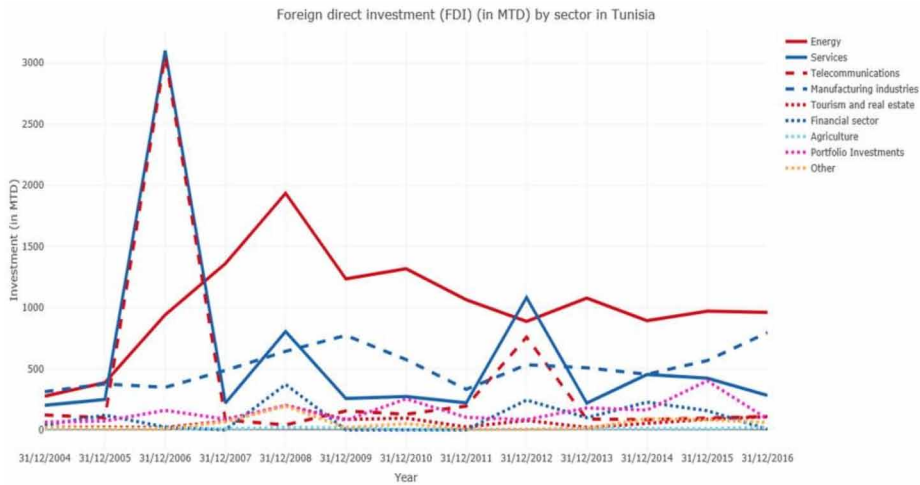
It should be noted that the services sector contributes largely to the Tunisian economy, almost 60% of the GDP, employing more than 50% of the Tunisian workforce following the last published statistics of INS in 2016, without ignoring the notable development in the tourism and the Information

Table 1. Basic statistics

Major indicators, 2017	
Population	11.44 million
Employment rate (%)	46.90
Employed (%), 2016	
Agriculture	14.8
Industry	33.1
Services	52.1
Unemployment rate (%)	14.7
Economic growth	2.7
Gross Domestic Product (GDP) (billion TND)	24.47
GDP per capita (USD), 2016	3688, 65

Source: Own elaboration, by using data published in INS and OECD

Figure 1. FDI changes in Tunisia (Source: Own elaboration, data retrieved from the Tunisian Central Bank)



and communication technologies sector in the last years. Hence, this paper will focus on the impact of the political risk factors on the FDI in the services sectors.

METHODOLOGY AND DATA

Yearly data from 2004 to 2016 were used in this paper. FDI inflow data were sourced from the World Bank's World Development Indicator and the Tunisian Central Bank websites. Political risk data was retrieved from the Worldwide Governance Indicators' website.

The WGI estimated six aggregate factors related to the governance pillars: Control of Corruption Political Stability and Absence of Violence/Terrorism, Voice and Accountability, Government Effectiveness, Regulatory Quality and Rule of Law.

Those indicators are based on over 30 primary data sources reporting the governance observations of diverse survey respondents and global expert assessments. Details on the underlying data sources, the aggregation method, and the interpretation of the indicators, can be found in the WGI methodology paper: (Kaufmann et al., 2010).

The governance variables are defined as following²:

Voice and Accountability (VACC) reflects the observations over the participation of the country's citizens in the political elections, the freedom of expression and association and the media liberalization.

Political Stability and Absence of Violence/Terrorism (PSAVT) measures perceptions of the likelihood of political instability and/or politically-motivated violence, including terrorism.

Government Effectiveness (GVEF) reflects the observations over the quality of the public services, the quality of the civil services and the degree of its independence from the political controlling, the quality of policy setting and implementation, and the credibility of how the government maintain such policies.

Regulatory Quality (REQUA) reflects the observations over the capability of the government to set up and implement coherent policies and guidelines which activate and encourage the development of the private sector.

Rule of Law (RLAW) collect the observations related to the confidence of the agents in and abide the rules of society, and the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.

Control of Corruption (COCORR) reflects the observations over the extension of the public power exercised for private gain, including both minor and grand corruption methods, also the capture of the state by the leaders and the private interests.

The estimation of those governance variables is ranged in the interval $[-2.5, 2.5]$, 2.5 expressing a weak governance performance and -2.5 expressing a strong governance performance.

Figure 2 shows the changes of the governance indicators in Tunisia from 2004 to 2016.

The “voice and accountability” indicator is negative from 2004 until 2012. In 2013, this indicator starts to slightly increase. The government effectiveness registered negative estimation starting from 2011 (post revolution) which is due to the different government changes (7 years, 7 government chiefs for 14 governments)³. The control corruption indicator is negative during 2004-2016. Political Stability and Absence of Violence/Terrorism (PSAVT) decreased starting from 2011.

The correlation between the variables will be studied. The stationarity of the variables will be examined also, as we are dealing with time series data, Dickey –Fuller⁴ (ADF) test will be used.⁵

To study the relationship between the FDI and the different governance indicators, a multiple linear regression model⁶ will be constructed, the FDI volume will be considered as dependent variable, the six governance indicators will be considered as the independent variables⁷.

The theoretical model has the following expression:

$$Y = \beta_0 + \beta_i X_i + \varepsilon$$

With Y: the FDI volume

X_i : Governance indicators, i in $\{1, \dots, 6\}$

β_0 : Model intercept

β_i : the coefficient of each independent variable

ε : error term

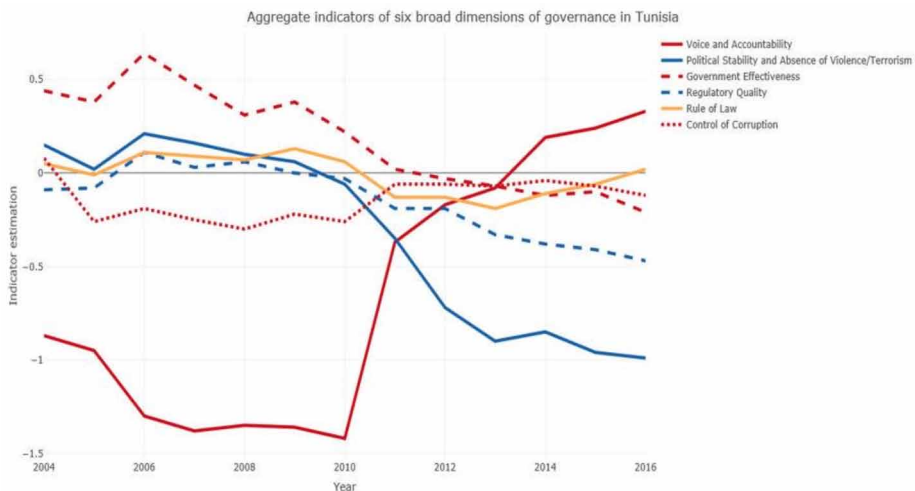


Figure 2. Governance indicators in Tunisia Source: Own elaboration, data retrieved from WGI

RESULTS AND DISCUSSION

The correlation matrix (presented in Table 2) shows that FDI has negative correlation with the control of corruption indicator (COCORR) and the Voice and Accountability (VACC). In addition, there are positive correlations between FDI and rule of law (RLAW), political stability and absence of violence/terrorism (PSAVT), government effectiveness (GVEF) and regulatory quality (REQUA). So, the correlation proves the idea that the political risk factors impact the FDI.

The stationarity of the FDI and the different indicators were examined via ADF test. The first difference⁸ for each variable was considered in the modelling. To get the most performant indicators in the model, the stepwise⁹ technic was used. Via the stepwise technic, the Rule of Law (RLAW) variable was removed i.e. it will not be included in the regression model.

Table 3 summarizes the results of the regression models. The first model considers the FDI volume for all the sectors as dependent variable and the second model considers the FDI in the services sector as dependent variable.

Voice and Accountability (VACC), Government Effectiveness (GVEF) and Regulatory Quality (REQUA) show significant positive relationship with FDI in all sectors. So, improving the government effectiveness, the voice and accountability and the regulatory quality will increase the FDI. The Voice and Accountability and Government Effectiveness have a significant and positive relationship with FDI in the services sector.

Table 2. Correlation matrix

	VACC	PSAVT	GVEF	REQUA	RLAW	COCORR	FDI
PSAVT	-0,949*						
GVEF	-0,898*	0,955*					
REQUA	-0,965*	0,949*	0,922*				
RLAW	-0,759*	0,752*	0,752*	0,685*			
COCORR	0,660	-0,494	-0,443	-0,583	-0,559		
FDI	-0,316	0,208	0,294	0,424	0,358	-0,441	

Source: Own elaboration

Table 3. Regression results

Term	Model1: FDI is the independent variable		Model2: FDI in the services sector is the independent variable	
	Coef	P-Value	Coef	P-Value
Constant	-0,0489	0,458	-0,050	0,851
Voice and Accountability (VACC)	0,947	0,012*	3,314	0,021*
Political Stability and Absence of Violence/Terrorism (PSAVT)	0,556	0,078	0,643	0,523
Government Effectiveness (GVEF)	1,716	0,020*	5,16	0,048*
Regulatory Quality (REQUA)	4,331	0,014*	7,77	0,116
Control of Corruption (COCORR)	-2,561	0,040*	-4,26	0,267
R-squared	89,47%		82,17%	

* significance at the 0.05 level

Source: Own elaboration

The Political Stability and Absence of Violence/Terrorism has a positive (but non-significant) relationship with FDI in all sectors and with FDI in the services sector. It could be noted here that this variable doesn't have a very crucial impact on the FDI as the other indicators.

The Control of Corruption (COCURR) has a negative and significant relationship with FDI in the all sectors. Also, it has a negative and non- significant relationship with FDI in the services sector. It is indispensable here to highlight that the estimated values of COCURR were negative in the raw data. Indeed, it could be concluded that the Tunisian control of corruption strategies still not efficient and not as expected to excel the FDI, especially after the revolution and the changes which the country has seen. In addition, the measurement of the control of corruption is not exact, but it was estimated based on further indicators (see WGI website), and some experts find that the measurement of political factors notably the control of corruption as impossible.

The R-square of the first regression model (FDI in all sectors was considered as dependent variable) equals to 89.47% which reveals that more than 89% of the variance of the FDI (in all sectors) in Tunisia was explained via this model. Similarly, the R-square of the second model (FDI in the service sector was considered as dependent variable) equals approximately to 82% which demonstrates that 82% of the variance of the FDI in the services sector in Tunisia was explained via this model. Consequently, the political risk indicators do pose a remarkable impact on the FDI in Tunisia. So, the Tunisian authorities and the experts should further work on improving the political factors; controlling the corruption, maintaining the role of the government and sustaining the country security.

CONCLUSION

Due to the geopolitical changes around the world, an important topic which is the political risk factors, raised and started to receive more attention. Indeed, the main purpose of this paper consists on examining the impact of the political risk indicators on the FDI volume in Tunisia, as FDI are crucial to maintain the Tunisian economy. The FDI in Tunisia declined in the post revolution phase due to the political instability and the absence of security but Tunisia has been working on re-winning the confidence of the investors.

To examine the relationship between the FDI and the political risk factors, two regression models were constructed, the first model considers the FDI in all the sectors as dependent variable and the second model considers the FDI in the services sector as the dependent variable. The services sector was examined as known that the services sector is a key sector in the Tunisian economy.

The analysis period starts in 2004 to 2016, which could be viewed as pre-evolution (before December 2010) and post-revolution (after January 2011).

On a hand, the regression results showed that "Political risk" is a determinant of FDI in Tunisia. Indeed, the corruption, the regulatory quality and the government effectiveness are the crucial factors which impact the FDI in all the sectors and the FDI in the services sector. Therefore, it is highly required for Tunisia to reduce political risks and uncertainties and to update the investment policies to attract the investors and to maintain their confidence in the Tunisian political system since political instability play an important role in the determination of FDI and consequently, the long-run economic performance.

On other hand, some experts see that quantifying this relationship (political risk factors and FDI) is not crucial, that's why it has not been modelled frequently. In addition, they may see that if the country of interest does not legislate on the protection of the property of investment from abroad and does not allow the legislative authorities to highlight the importance of the foreign investments, excelling the FDI will be more challenging for the country (as government is totally independent from the legislative authority). Here, adding the factor of legislation and its strict application by the administration of Justice in the model is challenging but it allows to figure out in more details the determinant of the FDI. Further challenging research is required to estimate the legislative factor and then to investigate the relationship between the legislative factor and the FDI.

ACKNOWLEDGMENT

The author would like to acknowledge the valuable comments and suggestions of Prof. Markus C. Kerber, Professor at the Technology University of Berlin, which have greatly improved the paper. The author's thanks are also extended to Dr. Musa Khan for initiating the paper.

REFERENCES

- Aguiar, S., Connaria, L. A., Gulamhussen, M. A., & Magalhães, P. C. (2012). Foreign Direct Investment and Home-Country Political Risk: The Case of Brazil. *Latin American Research Review*, 47(2), 144–165. doi:10.1353/lar.2012.0013
- Almfrajia, M.A., & Almsafir, M.K. (2013). Foreign Direct Investment and Economic Growth Literature Review from 1994 to 2012. *Procedia - Social and Behavioral Sciences*, 129, 206–213.
- Amal, M., Tomio, B., & Raboch, H. (2010). Determinants of foreign direct investment in Latin America. *Journal of Globalization. Competitiveness and Governability*, 4(3), 116–133.
- Asiedu, E. (2006). Foreign direct investment in Africa: The role of natural resources, market size, government policy, institutions & political instability. *World Economy*, 29(1), 63–67. doi:10.1111/j.1467-9701.2006.00758.x
- Asiedu, E., & Lien, D. (2011). Democracy, foreign direct investment and natural resources. *Journal of International Economics*, 84(1), 99–111. doi:10.1016/j.jinteco.2010.12.001
- Ayadi, M., & Mattoussi, W. (2014). Scoping of the Tunisian Economy. *WIDER*.
- Bellin, E. (1994). The politics of profit in Tunisia: Utility of the rentier paradigm? *World Development*, 22(3), 427–436. doi:10.1016/0305-750X(94)90133-3
- Brink, C. H. (2004). *Measuring political risk: Risks to foreign investment*. Aldershot: Ashgate Publishing.
- Bussmann, M. (2010). Foreign direct investment and militarized international conflict. *Journal of Peace Research*, 47(2), 143–153. doi:10.1177/0022343309354143
- Choe, J. I. (2003). Do Foreign Direct Investment and Gross Domestic Investment Promote Economic Growth? *Review of Development Economics*, 7(1), 44–57. doi:10.1111/1467-9361.00174
- Click, R. W. (2005). Financial and Political Risks in US Direct Foreign Investment. *Journal of International Business Studies*, 36(5), 559–575. doi:10.1057/palgrave.jibs.8400157
- Dar-Hsin, C., Feng-Shun, B., & Chun-Da, C. (2005). The impacts of political events on foreign institutional investors and stock returns: Emerging market evidence from Taiwan. *International Journal of Business*, 10, 165–188.
- Freckleton, M., Wright, A., & Craigwell, R. (2012). Economic growth, foreign direct investment and corruption in developed and developing countries. *Journal of Economic Studies (Glasgow, Scotland)*, 39(6), 639–652. doi:10.1108/01443581211274593
- Getz, K. A., & Volkema, R. J. (2001). Culture, perceived corruption and economics. *Business & Society*, 40(1), 7–30. doi:10.1177/000765030104000103
- Habib, M., & Zurawicki, L. (2002). Corruption and Foreign Direct Investment. *Journal of International Business Studies*, 33(2), 291–307. doi:10.1057/palgrave.jibs.8491017
- Hines, J. (1995). Forbidden payments: Foreign bribery and American business after 1977. *National Bureau of Economic Research*.
- Howell, L. D. (2001). *The Handbook of Country and Political Risk Analysis*. East Syracuse, NY: The PRS Group.
- Howell, L. D., & Chaddick, B. (1994). Models of political risk for foreign investment and trade. *The Columbia Journal of World Business*, 29(Fall), 70–91. doi:10.1016/0022-5428(94)90048-5
- IMF. (2003). *The International Monetary Fund (IMF)*. Retrieved from <https://www.imf.org/en/Countries/TUN>
- INS. (2018). *The National Institute of statistics in Tunisia*. Retrieved from <http://www.ins.tn>
- Janeba, E. (2002). Attracting FDI in a politically risky world. *International Economic Review*, 43(4), 1127–1155. doi:10.1111/1468-2354.t01-1-00051
- Kaufmann, D., Kraay, A., & Mastruzzi, M. (2010). The Worldwide Governance Indicators: Methodology and Analytical Issues. *World Bank Policy Research*.
- Khan, M., & Ibne Akbar, M. (2013). The impact of political risk on foreign direct investment. *Munich Personal RePEc Archive*.

Mauro, P. (1995). Corruption and Growth. *The Quarterly Journal of Economics*, 110(3), 681–712. doi:10.2307/2946696

McKellar, R. (2010). *A Short Guide to Political Risk*. Farnham: Gower Publishing Ltd.

Meldrum, D. H. (2000). Country risk and foreign direct investment. *Business Economics (Cleveland, Ohio)*, 35(1), 33–40.

Mello, D. (1999). Foreign direct investment-led growth: Evidence from time series and panel data. *Oxford Economic Papers*, 51(1), 133–151. doi:10.1093/oepp/51.1.133

Nye, J. S. (1979). Corruption and political development: a cost-benefit analysis. In M. Ekpo (Ed.), *Bureaucratic corruption in Sub-Saharan Africa: Causes, consequences and controls* (pp. 57–79). Washington: University Press of America.

OECD. (2000). Main determinants and impacts of Foreign Direct Investment on China's economy.

Osabutey, E., & Okoro, C. (2015). *Investment in Africa: The Case of the Nigerian Telecommunications Industry*. Wiley Periodicals.

Osabutey, E. L., & Debrah, Y. A. (2012). Foreign direct investment and technology transfer policies in Africa: A review of the Ghanaian experience. *Thunderbird International Business Review*, 54(4), 441–456. doi:10.1002/tie.21475

Osabutey, E. L., & Okoro, C. (2015). *Foreign Direct Investment in Africa: The Case of the Nigerian Telecommunications Industry*. Wiley.

Penn World Table. (n.d.). *Center for International Comparisons of Production, Income and Prices*. University of Pennsylvania. Retrieved from <http://www.pwt.sas.upenn.edu>

Romer, P. (1993). Idea gaps and object gaps in economic development. *Journal of Monetary Economics*, 32(3), 543–573. doi:10.1016/0304-3932(93)90029-F

Roy, A. G., & Van den Berg, H. F. (2006). *Foreign Direct Investment and Economic Growth: A Time-Series Approach*. Economics Department Faculty Publications.

Solomon, E. (2011). Foreign Direct Investment, Host Country Factors and Economic Growth. *Ensayos Revista de Economía*, 30(1).

Stoychev, S. P. (2013). Political Risk in Europe: A Quantitative Index Based on Measures of Corruption, Market Distortion, and the Shadow Economy. *Journal of Political Risk*, 1(5).

The Political Risk Services Group. *International country risk guide methodology*. Retrieved from http://www.prsgroup.com/ICRG_Methodology.aspx

The Worldwide Governance Indicators (WGI). (2016). *The Worldwide Governance Indicators (WGI)*. Retrieved from <http://info.worldbank.org/governance/wgi/>

Tunisian Central Bank. Retrieved from https://www.bct.gov.tn/bct/siteprod/stat_index.jsp?la=AN

United Nations Conference on Trade and Development (UNCTAD). (n.d.). *STAT – Statistical Database*. Retrieved from http://unctadstat.unctad.org/ReportFolders/reportFolders.aspx?sRF_ActivePath=p,5&sRF_Expanded=p,5

Webmanager. Retrieved from <https://www.webmanagercenter.com/2017/09/13/409884/tunisie-post-revolution-7-ans-7-chefs-pour-14-gouvernements/>

Wei, S.-J. (2000). How taxing is corruption on international investors? *The Review of Economics and Statistics*, 82(1), 1–11. doi:10.1162/003465300558533

World Bank. (1997). *Private Capital Flows to Developing Countries: The Road to Financial Integration*. Washington, D.C. World Bank, (1997b). *Global Development Finance 1997*. Washington D.C. World Bank. *GDP (Current US\$)*. Retrieved from <http://data.worldbank.org/indicator/NY.GDP.MKTP.CD>

World Bank. (2016). The Worldwide Governance Indicators: A Summary of Methodology, Data and Analytical Issues. *World Bank Policy*.

ENDNOTES

- ¹ Governance term consist on the process, policies and the institutions followed by the authority within a country. See WGI website for further details.
- ² WGI website
- ³ (WEBMANAGERCENTER, 2010)
- ⁴ The augmented Dickey-Fuller test (ADF) examines the stationarity of a time series. The test is as following: if the null hypothesis (H0) is retained (presence of unit roots), then the process is nonstationary. (Dickey & Fuller, 1979)
- ⁵ The results are not reported here but available on request.
- ⁶ We graphically plotted the variables into pairs to verify the linearity.
- ⁷ The multi-collinearity between the variables was checked via VIF (Variance Inflation Factor) indicator, the results are not reported here but available on request.
- ⁸ The results are not reported here but available on request
- ⁹ The results are not reported here but available on request

APPENDIX A: FDI IN TUNISIA BY SECTOR

The Tunisian Central Bank published the data related the Foreign Direct Investment' amounts by sector, in Milliard Tunisian Dinar (MDT) between 2004-2016. The following table shows the published amounts with calculating the mean over the period 2004-2016.

Table 4. FDI in Tunisia by sector

Date /Indicator	FDI in MDT	Energy	Manufacturing industries	Services	Tourism and real estate	Telecommunications	Financial sector	Other	Agriculture	Portfolio Investments
2004	796	274	312	200	22	121	38	19	10	63
2005	1016	386	375	248	17	99	120	12	7	72
2006	4403	940	347	3102	18	3056	22	6	14	159
2007	2071	1359	486	218	72	80	0	66	8	87
2008	3398	1934	642	804	199	40	371	194	19	198
2009	2278	1234	772	256	85	154	0	17	17	78
2010	2164	1317	574	272	95	127	0	50	2	253
2011	1616	1063	331	220	23	194	0	3	2	102
2012	2504	886	532	1082	77	758	243	4	4	83
2013	1814	1077	507	218	19	88	99	12	12	179
2014	1806	892	454	452	52	83	226	91	8	161
2015	1967	970	566	422	86	98	156	82	9	401
2016	2057	960	795	281	107	109	5	60	21	88
Mean of FDI in MDT between 2004-2016	2145,38	1022,46	514,85	598,08	67,08	385,15	98,46	47,38	10,23	148,00

Source: Tunisian Central Bank

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