

THE EFFECT OF CRONYISM ON DEBT ACCESS: THE CASE OF TUNISIAN LISTED FIRMS

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Abstract

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The objective of this paper is to study the effect of cronyism on debt access. Cronyism is concretized by two factors: regulation and political connections. The study is carried out on a sample of Tunisian firms for the period between 2006-2013. First, we test the effect of regulation and political connections on debt access by proceeding with a multiple linear regression model. Results show that regulation is positively associated with the debt ratio. However political connections do not increase the debt ratio. Then, we applied a difference-in-difference model to take account of the natural experiment of the political uprising. The effect of cronyism is confirmed only before this event.

Keywords: Debt Access, Regulation, Political Connections, Cronyism, Political Uprising

1. INTRODUCTION

Cronyism occurs when the political engagement of the State becomes entangled in the economic interests of some private actors. It takes the form of favouritism, governmental subsidies and tax breaks. The ultimate objective remains the appropriation of rents. The intensity of the relationship and the profits which result from it remain relative to the context and dependent on the level of corruption. This paper addresses some of these issues by studying the case of an emerging market country characterised by a strong potential for corruption. We associate cronyism with two factors, which are the regulations of investment and economic initiative and political connections (Rajan and Zingales 1995; La Porta *et al.* 1998 and 2002; Rijkers *et al.* 2017).

In the case of regulation, the government should normally grant privileges to specific sectors to support and protect them from market inefficiency. Regulation must, therefore, protect the general interest. Associated with corruption, its objective can deviate to protect private interests (Djankov *et al.*, 2002). The means used are first restrictions which prevent national and international competitors from practising in regulated sectors. Second, there are privileges such as tax exemptions or priorities in the granting of subsidies. The objective of regulation is then to maintain or increase the benefit of the targeted sectors (Rijkers *et al.* 2017). The government gives a positive signal about the efficiency and solvency of regulated firms and facilitates their debt access (Bortolotti and

Faccio 2009, Boubakri and Cosset 1998, Boubakri *et al.* 2004; Bessler *et al.* 2011; Graham *et al.* 2015).

On the other hand, political connections present a considerable source of opportunism. The link which exists between political connections and regulation revolves around the role that can be played by the State in one or the other of these factors. The effect of political connections on debt access has attracted the attention of many researchers. In this respect, the study carried out by Faccio (2006) is considered to be a reference, thanks to the diversity of the contexts explored and the relevance of the results. According to the author, a firm is considered to be politically connected if one of its managers or shareholders is a member of the government. The particularity of these firms is to take advantage of all kinds of privileges that the government can offer. The author focuses, essentially, on the high level of debt, tax reductions, the acquisition of a substantial market share in the form of a concession, licenses and government contracts. Indeed, in the countries marked by corruption, political connections give access to many benefits, of which is access to bank financing. This opinion has been verified, for example, by Faccio (2006; 2010), Khawaja and Mian (2005) and Ebrahim *et al.* (2014). These authors show that politically connected firms benefit from corruption to increase their financial leverage. In the emerging market countries with a strong potential for corruption, the effects of regulation and political connections converge. Rijkers *et al.* (2017) studied the case of Tunisia and highlight the relationship between the two factors. The authors show that the businesses

owned by the Ben Ali family and their affiliates have greatly benefited from regulation to defend their private interests. These firms enjoyed real protectionism on the part of the governmental authorities. Indeed, even lucrative areas that do not have a regulatory framework have been the subject of radical changes in their favour leading toward total control, especially in regards to restrictions on foreign direct investment and tax benefits.

The first aim of this paper consists of examining the impact of cronyism on debt access for Tunisian firms through two factors: regulation and political connections. The second aim is to test the effect of the interaction between political connections and regulation on debt access. This is intended to explain the rent seeking incentive for politically connected firms which operate in the most heavily regulated sectors. The last aim is to verify the impact of cronyism before and after the Tunisian 2011 uprising. So, we take into account two different periods based on contrasting political environments (authoritarian versus democratic).

In order to meet our objectives, we have formed a sample of 50 Tunisian firms listed on the stock exchange of Tunis. Our source of data is the financial statements that are audited and published officially. The sample includes firms operating in regulated sectors. Similarly, it includes politically connected firms. The study extends from 2006 to 2013. This period witnessed the political uprising which took place in 2011. The years following this date have been marked by the succession of governments which have tried to ensure a transition putting an end to the abuse recorded by the former regime. During this period, considerable efforts have been made in fighting against corruption and favouritism in its different forms.

Results show that regulated firms are much more heavily leveraged and indebted. Regulation gives them the necessary protection and facilitates their recourse to debt. Politically connected firms are less indebted. This result does not conform with the theoretical framework. However, Rijkers *et al.* (2017) explain that firms belonging to the family of the former president have taken advantage of the most heavily regulated sectors. So, these firms are very lucrative and do not increase their debt. In order to provide a check of this fact, we carried out a study of the interaction between regulation and political connections. We obtained a negative relationship between the interaction term and leverage. Thus, we confirm that debt access does not represent a source of opportunism for these firms. In return, politically connected firms take advantage of cronyism to become highly lucrative. In the last step, we have shown that the effect of cronyism was statistically significant before the uprising, but after this event, cronyism does not have statistically significant results.

This article is structured as follow. Section 2 proposes a literature review concerning two determinants of the debts associated with cronyism. The first considers the effect of regulation of investments and economic initiative. The second highlights the impact of political connections. Section 3 presents the sample and the variables studied. Section 4 is interested in the methodology. Section 5 displays the results and their discussion. Section 6 concludes.

2. LITERATURE REVIEW

2.1. The impact of regulation on debt access

The Government strengthened regulation to protect specific sectors from market inefficiency. This intervention takes the form of tax exemptions or government subsidies. Similarly, it takes the form of restrictions imposed on new entrants that are either national or international. From an economic perspective, regulation can protect the private interest at the expense of the general interest through government strategies. In this context, Shleifer and Vishny (1993) argue that the intervention of the State in the establishment of economic policy prepares the groundwork for crony capitalism. Also, some economic reforms have a devastating effect on the entire economy when they exclusively provide for the interests of only a few actors. Reforms are often strong and make it possible to overcome difficulties in the sectors concerned, but they slow and hinder the proper functioning of the others.

In the developed countries such as the USA and the UK, regulation generally concerns privatised firms and stems from independent agencies. In this context, the regulated firms are among the most indebted. This strategy is adopted in order to remain in a difficult situation requiring the support of regulators (Taggart 1981 and 1985; Dasgupta and Nanda 1993; Spiegel and Spulber 1994; and Spiegel 1997). On their part, Graham *et al.* (2015) studied the evolution of the indebtedness of U.S. firms over a considerable period that extends from 1920 to 2010. Their interest was focused on the effect of the changes in government borrowing, macroeconomic uncertainty and financial sector development. The authors have shown that firms which are in regulated sectors have kept a regular and relatively high debt level. During the same period and under the effect of the same factors, businesses not belonging to regulated sectors have had considerable fluctuations in their financial leverage.

In emerging market countries, regulated firms are State actors, semi-State actors or even private (Rijkers *et al.* 2017). In an environment dominated by corruption, regulation strengthens crony capitalism (Rijkers 2017). Businesses engaged in regulated sectors benefit from many advantages, including privileged access to debt (Stigler 1971; Shleifer and Vishny 1993, 1994; Bliss and Di Tella 1997; Ades and Di Tella 1999; Acemoglu and Verdier 2000). Rijkers *et al.* (2017) are interested in the Tunisian case. The authors show that regulation is exercised on the strategic sectors dominated either by state firms or private firms. Business ventures regulated in Tunisia benefit from the support of the government which ensures their profitability.

2.2. The impact of political connections on debt access

Politically connected firms seek different kinds of protectionism from the government for one main objective: that of the appropriation of rent. The members of the government involved are seeking, in their turn, to share the economic gain realised, or to strengthen their political support. This interaction between the economy and policy, marked by inequality, favouritism and corruption, is an integral part of cronyism. Although political connections are

based on this principle, it presents certain peculiarities that change depending on the nature of the link, the objectives of the people involved or the context. However, the direct intervention of the government in economic affairs is more widespread in emerging market countries, something which has also been studied by Laporta *et al.* (2002), Dinç (2005) and Beck *et al.* (2006).

Political connections represent a means to capture rents. For example, Faccio (2006) in an international context, and Fan *et al.* (2007) for Chinese firms that have come to be partially privatised, support this hypothesis. Similarly, Chang and Wong (2002) show that in China, favouritism takes various forms and that it will impact differently the performance of the politically connected firm. On their part, Khawaja and Mian (2005) combine political connection and corruption. They explain that political connection is a pretext for these firms to find the means to take rents in the form of funds granted by banks, mainly public, as loans. Bliss and Gul (2012) confirm that these firms receive debts granted by public and private banks. Ebrahim *et al.* (2014) deal with the case of firms concerned by favouritism in a general way. They specify that the latter benefit from government support through a whole series of operations: direct holdings in capital, control of banks, and sponsored investment. These benefits facilitate, as well, the use of debt. Saeed *et al.* (2015) treat the case of Pakistani firms and confirm that the latter get further into debt over the long term.

3. RESEARCH DESIGN

3.1. Data

The sample is composed of listed firms. The information is obtained from a manual data collection. Firms that belong to the banking, insurance, leasing, investment, and real estate sectors have different financial statements and, for this reason, have been excluded. For each firm, it is necessary to identify the ownership structure. Also, it is necessary to have the list of the board of directors' members. This information is used to identify the politically connected firms. After the selection process, we retained 50 firms. The period of the study extends from 2006 to 2013.

In Tunisia, the regulated sectors were identified by the World Bank in its report of 2014. Similarly, Rijkers *et al.* (2017) put emphasis on these sectors. These references identify the following areas: air and maritime transport, telecommunications, retail and distribution, real estate, the hotel and catering industry and financial services.

Politically connected firms concerned by this research belonged to the family of the deposed President Ben Ali and its affiliates. These firms were confiscated after the revolution. A list of these politically connected people has been published by the Swiss Federation.

$$L_{it} = \beta_0 + \beta_1 \text{Regulation}_{it} + \beta_2 \text{Po.connexion} + \beta_3 \text{Collateral}_{it} + \beta_4 \text{Growth}_{it} + \beta_5 \text{Size}_{it} + \beta_6 \text{ROA}_{it} + \beta_7 \text{Volatility}_{it} + \delta_t + u_i + \varepsilon_{it} \quad (1)$$

where L_{it} is respectively the total, long and short-term debt ratios, *Regulation* is a binary variable that equals 1 if the firm belongs to a regulated sector, *Po.connexion* is a dummy variable that equals 1 if the firm is politically connected, *Collateral* is the fixed assets to the total assets ratio, *Growth* is the natural logarithm of the relative

3.2. Measurement of variables

Debt access is measured by the total debt ratio (*TD*), the long-term debt ratio (*LTD*) and the short-term debt ratio (*STD*). The measures used consider the maturity of the debt (Frank and Goyal 2009; Rajan and Zingales 1995; Titman and Wessels 1988). This dimension is important in a bank-oriented economy where debt is hardly accessible. In this case, banks prefer to give debt in the short term to help firms access the financing they need. Long-term debt involves more costs for the firm and exposes creditors to more risk.

Cronyism was determined by two factors, which are regulation (*Regulation*) and political connections (*Po. Connect*). *Regulation* indicates the membership of a firm in a regulated sector (Bessler *et al.* 2011 and Graham *et al.* 2015). This is a binary variable that is equal to one when the firm belongs to one of the following sectors: air and maritime transport, telecommunications, retail and distribution, real estate, the hotel and catering industry and financial services.

The variable *Po.Connect* is a measure of political connections. The research conducted by Faccio (2006 and 2010), Khawaja and Mian (2005) and Bliss and Gul (2012) and many others, measure political connection by a binary variable. The point of difference between this research lies in the definition of the concept. In the context of Tunisia, the Swiss Federal Council has compiled the list of the members of the Ben Ali family and their relatives involved in the world of business. Also, politically connected firms are those that have at least a majority shareholder or a top executive member belonging to the clan of the former regime and whose name appears on the list mentioned.

The control variables are collateral, size, return on assets, growth opportunities, and volatility. *Collateral* (*Collateral*) is measured by the ratio of fixed assets divided by total assets (Rajan and Zingales 1995; Titman and Wessels 1988). *Size* (*Size*) is measured by the natural logarithm of total assets (Titman and Wessels 1988; Rajan and Zingales 1995). *Return on assets* (*ROA*) is measured by the result before interest and tax on the total assets as in the case of Booth *et al.* (2001) and Huang and Song (2006). *Growth opportunities* (*Growth Opportunity*) are measured by the natural logarithm of the relative growth rate of total assets (Frank and Goyal 2009; Kremp and Stoss 2001; Titman and Wessels 1988). *Volatility* (*Volatility*) is measured by the standard deviation of return on assets as suggested by Booth *et al.* (2001).

3.3. Estimation Model

As a baseline, multiple linear regression models were used to analyze the influence of regulation and political connections on debt access. The model was the following:

assets' variation, *Size* is the natural logarithm of the total assets, *ROA* is the earnings before interest and tax to the total assets ratio. *Volatility* is the standard deviation of return on assets, δ_t is the time fixed effect, u_i is the individual fixed effect and ε_{it} is an error term.

4. SUMMARY STATISTICS

Table 1 presents descriptive statistics of the variables used. It shows that almost 80% of businesses belong to regulated sectors. This means that most listed Tunisian firms are regulated. This result can be justified by the fact that access to the

financial market is in itself reserved for lucrative firms operating in strategic sectors. Similarly, almost 24% of firms are politically connected. The politically connected people are part of the family of the former regime. Political links are determined either through participation in the ownership structure or through membership on the board of directors.

Table 1. Summary statistics

Variables	Mean	s.d.	Min	Max
TD	0.212	0.211	0	0.928
LTD	0.0944	0.121	0	0.738
STD	0.132	0.150	0	0.752
Collateral	0.310	0.202	0	0.834
Growth	-1.040	0.502	-2.213	0.117
Size	4.482	0.571	3.176	5.806
ROA	0.0448	0.108	-0.633	0.340
Volatility	1.766	4.905	0	47.82
Summary statistics for binary variables				
Variables	Value		Frequency	
Regulation	0		0.195	
	1		0.805	
Po.connexion	0		0.756	
	1		0.244	

Note: TD, LTD, STD are respectively the total, long and short term debt ratios. Regulation is a binary variable that equals 1 if the firm belongs to a regulated sector, 0 otherwise. Po.connexion is a dummy variable that equals 1 if the firm is politically connected, 0 otherwise. Collateral = fixed assets/total asset. Growth = $\log((\text{total asset}_t - \text{total asset}_{t-1})/\text{total asset}_t)$. Size = $\log(\text{total asset}_t)$, ROA = net income/total assets, volatility = $ROA_t/\sigma ROA_t$.

The descriptive statistics in Table 2 show that regulated firms are much more heavily leveraged. The result is significant for the ratios of total debt and short-term debt. Also, these firms are more

profitable, bigger, possess more growth opportunities and have more volatile returns. However, the regulated firms possess fewer collaterals.

Table 2. Comparison between regulated and unregulated firms

Variable	Unregulated firms	Regulated firms	Difference	t-value
	(A)	(B)	(A-B)	
TD	0.110	0.235	-0.125	-3.299***
LTD	0.075	0.098	-0.023	-1.050
STD	0.072	0.145	-0.073	-2.699***
Collateral	0.364	0.297	0.067	1.876**
Growth	-1.220	-1.000	-2.219	-2.043**
Size	3.981	4.604	-0.623	-6.778***
ROA	0.041	0.045	-0.004	-0.227
Volatility	1.540	1.820	-0.280	-0.323

Note: TD, LTD, STD are respectively the total, long and short term debt ratios. Regulation is a binary variable that equals 1 if the firm belongs to a regulated sector, 0 otherwise. Po.connexion = is a dummy variable that equals 1 if the firm is politically connected, 0 otherwise. Collateral = fixed assets/total asset. Growth = $\log((\text{total asset}_t - \text{total asset}_{t-1})/\text{total asset}_t)$. Size = $\log(\text{total asset}_t)$, ROA = net income/total assets, volatility = $ROA_t/\sigma ROA_t$.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 3 indicates that politically connected firms are less indebted. Similarly, they have less growth opportunity and are less volatile. However,

their size, profitability and collaterals are more important.

Table 3. Comparison between connected and unconnected firms

Variable	Unconnected firms	Connected firms	Difference	t-value
	(A)	(B)	(A-B)	
TD	0.238	0.132	0.106	3.109***
LTD	0.099	0.077	0.22	1.119
STD	0.157	0.054	0.102	4.292***
Collateral	0.302	0.333	-0.030	-0.904
Growth	-1.037	-1.048	0.010	0.109
Size	4.411	4.699	-0.287	-3.104***
ROA	0.034	0.075	-0.041	-2.316**
Volatility	2.00	1.01	0.992	1.245

Note: TD, LTD, STD are respectively the total, long and short term debt ratios. Regulation is a binary variable that equals 1 if the firm belongs to a regulated sector, 0 otherwise. Po.connexion = is a dummy variable that equals 1 if the firm is politically connected, 0 otherwise. Collateral = fixed assets/total asset. Growth = $\log((\text{total asset}_t - \text{total asset}_{t-1})/\text{total asset}_t)$. Size = $\log(\text{total asset}_t)$, ROA = net income/total assets, volatility = $ROA_t/\sigma ROA_t$.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

So, it seems that regulated firms are more indebted, unlike politically connected firms. Furthermore, both categories of firms are among the most profitable and the biggest (Rijkers *et al.* 2017).

Table 4. Correlation matrix

Variable	TD	LTD	STD	Collateral	Growth	Size	ROA	Volatility	Regulation	Po.connexion
TD	1.00									
LTD	0.77*	1.00								
STD	0.89*	0.49*	1.00							
Collateral	0.14*	0.38*	-0.03	1.00						
Growth	0.20*	0.27*	0.08	0.03	1.00					
Size	0.14*	0.14*	0.09	-0.16*	0.16*	1.00				
ROA	-0.21*	-0.27*	-0.13*	-0.17*	-0.01	0.25*	1.00			
Volatility	0.11	0.11	0.08	0.06	0.02	-0.03	-0.13*	1.00		
Regulation	0.23*	0.08	0.19*	-0.13*	0.17*	0.44*	0.02*	0.02*	1.00	
Po.connexion	-0.19*	0.03	-0.16*	-0.08	0.16*	0.44*	0.06*	0.01*	0.92*	1.00

Note: TD, LTD, STD are respectively the total, long and short term debt ratios. Regulation is a binary variable that equals 1 if the firm belongs to a regulated sector, 0 otherwise. Po.connexion = is a dummy variable that equals 1 if the firm is politically connected, 0 otherwise. Collateral = fixed assets/total asset. Growth = $\log((\text{total asset}_t - \text{total asset}_{t-1})/\text{total asset}_t)$. Size = $\log(\text{total asset}_t)$, ROA = net income/total assets, volatility = $ROA_t/\sigma ROA_t$.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 4 shows correlations between leverage, cronyism factors (Regulation and Po.connection) and firm characteristics (Collateral, Growth, Size, ROA and Volatility). Leverage is positively correlated with regulation and inversely correlated with political connections. Furthermore, the dependent variables do not present any correlation problem.

5. RESULTS AND DISCUSSIONS

5.1. Regulation, political connections and debt access

Results reported in Table 5 show that *Regulation* is positively and significantly associated with the total and long-term debt ratio, indicating that regulation promotes the use of debt. Indeed, firms belonging to regulated sectors benefit from the support of the government. This fact leads creditors to grant them more loans. This finding was supported by Stigler 1971; Shleifer and Vishny 1993, 1994; Bliss and Di Tella 1997; Bessler *et al.* (2011), and Graham *et al.* (2015).

On the other hand, the variable *Po.Connection* is negatively and significantly related to the debt ratio. A significant coefficient is obtained with the long-term debt ratio. The result shows that politically connected firms do not accumulate excessive debt, which is in contradiction with the theoretical literature argued in particular by Faccio (2006 and 2010) and Khawaja and Mian (2005). To explain this result, we are referred to the study of Rijkers *et al.* (2017). The authors explain those

politically connected firms, mainly those possessed by the family of the former president, profited from higher regulation, which enhances their profitability. For robustness, we consider the interaction effect of regulation and political connections and we suppose that such an effect explains the unexpected negative relationship.

Concerning the control variables, results obtained in Table 5 show that the variables *Collateral*, *growth* and *size* are significantly and positively related to debt. Indeed, fixed assets can be liquidated if the firm is unable to repay all of its borrowings, thus reducing the losses incurred by creditors (Williamson 1988, Shleifer and Vishny 1992). Similarly, firms with high growth opportunities exhaust their self-financing capacity and prefer debt to raise funds (Bessler *et al.* 2011). Also, the size of the company can reduce the problems of information asymmetry and therefore favors the use of debt (Rajan and Zingales 1995; Fama and French 2002). However, the variable *ROA* is negatively related to debt. This result shows that the most profitable firms take on less debt (Harris and Raviv 1991; Rajan and Zingales 1995 and Frank and Goyal 2009). Moreover, the variable *Volatility* did not yield a significant result.

5.2. The interactive effect between regulation and political connection

To test the combined effect of regulation and political connections, we include an interaction term in the model presented as follows:

$$L_{it} = \beta_0 + \beta_1 \text{Regulation}_{it} + \beta_2 \text{Po.connexion}_{it} + \beta_3 \text{Regulation}_{it} * \text{Po.connexion}_{it} + \beta_4 \text{Collateral}_{it} + \beta_5 \text{Growth}_{it} + \beta_6 \text{Size}_{it} + \beta_7 \text{ROA}_{it} + \beta_8 \text{Volatility}_{it} + \delta_t + u_i + \varepsilon_{it} \quad (2)$$

The interaction between political connection and regulation has a negative and significant effect on the debt ratio (Table 5). Hence, we confirm that the politically connected firms belonging to regulated sectors would not get further into debt. The hypothesis of rent-seeking incentives is confirmed through income-generating activities. Politically connected firms rely on regulation to prevent national and international competition, tax

exemptions, and any other advantage gained from the government. Rijkers *et al.* (2017) study the effect of the interaction between regulation and political connection in Tunisia to justify disparity at the level of the share of aggregate employment, output and profits. The authors show that the clan of the former Tunisian president invested in lucrative sectors that are heavily regulated, thus benefiting from a system of crony capitalism on a large scale.

Table 5. Cronyism and debt access: the effect of regulation and political connections

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	TD	LTD	STD	TD	LTD	STD
Regulation	0.148* (0.0832)	0.0846** (0.0370)	0.0742 (0.0644)	0.0775 (0.0487)	0.0427* (0.0221)	0.0940** (0.0370)
Po.connexion	-0.0828 (0.0899)	-0.125*** (0.0400)	0.00453 (0.0696)	-0.0965 (0.0886)	-0.126*** (0.0402)	-0.00909 (0.0673)
Regulation* Po.connexion				-0.00835 (0.0945)	-0.127*** (0.0428)	-0.0860 (0.0717)
Collateral	0.148* (0.0777)	0.232*** (0.0345)	-0.0666 (0.0601)	0.184** (0.0776)	0.234*** (0.0352)	-0.0291 (0.0589)
Growth	0.0516* (0.0298)	0.0447*** (0.0132)	0.00985 (0.0231)	0.0494* (0.0293)	0.0455*** (0.0133)	0.00689 (0.0223)
Size	0.0595** (0.0290)	0.0572*** (0.0129)	0.00413 (0.0225)	0.0708** (0.0289)	0.0575*** (0.0131)	0.0161 (0.0220)
ROA	-0.968*** (0.209)	-0.538*** (0.0929)	-0.325** (0.162)	-0.973*** (0.205)	-0.548*** (0.0930)	-0.323** (0.156)
Volatility	0.00305 (0.00277)	0.00123 (0.00123)	0.00212 (0.00215)	0.00244 (0.00274)	0.00119 (0.00124)	0.00150 (0.00208)
Constant	0.419 (0.445)	0.109 (0.198)	0.415 (0.344)	-0.0805 (0.131)	-0.111* (0.0594)	0.0388 (0.0994)
Observations	144	144	144	144	144	144

Note: TD, LTD, STD are respectively the total, long and short term debt ratios. Regulation is a binary variable that equals 1 if the firm belongs to a regulated sector, 0 otherwise. Po.connexion = is a dummy variable that equals 1 if the firm is politically connected, 0 otherwise. Collateral = fixed assets/total asset. Growth = $\log((\text{total asset}_t - \text{total asset}_{t-1})/\text{total asset}_t)$. Size = $\log(\text{total asset})$, ROA = net income/total assets, volatility = $ROA_t/\sigma ROA_t$.

Standard errors in parentheses.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

5.3. A comparison between the pre and post-uprising periods

Then, through a natural experiment approach, we examined the impact of political connections on

$$L_{it} = \beta_0 + \beta_1 \text{Regulation}_{it} * \text{uprising} + \beta_2 \text{Po.connexion}_{it} * \text{uprising} + \beta_3 \text{Collateral}_{it} * \text{uprising} + \beta_4 \text{Growth}_{it} * \text{uprising} + \beta_5 \text{Size}_{it} * \text{uprising} + \beta_6 \text{ROA}_{it} * \text{uprising} + \beta_7 \text{Volatility}_{it} * \text{uprising} + \delta_t + u_i + \varepsilon_{it} \quad (3)$$

Results highlight the impact of regulation and political connections on debt access during two different periods. Saeed *et al.* (2015) adopted the same approach to analyse the effect of political connections on Pakistani firms' performance.

The pre-uprising period in Tunisia was characterised by the domination of an authoritarian regime which encouraged the practice of cronyism. The results in Table 6 confirm this fact. Indeed, the firms belonging to regulated sectors benefitted from the advantages granted to increase their indebtedness. Politically connected firms did not increase their leverage. In the contrary, they benefit from heavy regulation to become excessively lucrative (Rijkers 2017). Politically connected firms belonging to the clan of the former regime have benefited from a very high degree of cronyism.

After the revolution, the country has no longer been under a dictatorship. This period is characterised by the establishment of a democratic regime which should normally limit the practices of cronyism. Results are not significant and do not allow us to confirm the effect of the limitation of cronyism on firm financing.

6. CONCLUSION

In terms of this paper, we have examined the impact of cronyism on debt access through two factors, which are regulation and political connections. First, regulation can be considered as a source of privilege

debt access before and after the uprising. We applied difference-in-difference models to distinguish between the two periods. The model was the following:

when it protects the private interests of some of the actors at the expense of others. Belonging to a regulated sector enhances the performance and the solvency of firms. Additionally, they can access debt more easily.

Political connections constitute another source of cronyism. Previous studies show that this factor promotes access to debt. However, in the case of Tunisia, we have obtained conflicting results. The reason has already been explained by Rijkers *et al.* (2017) who associate the abuse of the Ben Ali family and its affiliates with entry regulation. This privilege favoured their profitability and the appropriation of all kinds of benefits. The interaction effect between political connection and regulation confirms that politically connected firms belonging to the regulated sectors are less leveraged. Thus, the rent-seeking incentives is realised through benefits generated from lucrative activities.

After the uprising, Tunisia has been able to get rid of the dominance of the Ben Ali regime. As well, we have taken into consideration the natural experiment of the revolution to compare the effect of regulation and political connection during the two periods separated by the event. Results are almost the same between the two periods, which seems logical. Indeed, the government does not succeed in limiting cronyism. It was only in October 2016 that a new investment code was proposed. It is still waiting to be implemented. Tunisia remains a good place to study the different measures likely to limit cronyism.

Table 6. The comparison between the pre and post-uprising periods

Variables	(1)	(2)	(3)
	TD	LTD	STD
Cronyism proxies			
Before the uprising event			
Regulation	0.116** (0.0548)	-0.0101 (0.0251)	0.106** (0.0423)
Po.connexion	-0.110*** (0.0412)	-0.0265 (0.0189)	-0.0876*** (0.0318)
After the uprising event			
Regulation	0.0457 (0.0718)	-0.00124 (0.0329)	0.0401 (0.0553)
Po.connexion	-0.0447 (0.0614)	0.00339 (0.0281)	-0.0663 (0.0473)
Firm's characteristics			
Before the uprising event			
Collateral	0.0807 (0.0959)	0.135*** (0.0440)	-0.0557 (0.0739)
Growth	0.242* (0.125)	0.324*** (0.0572)	-0.0378 (0.0963)
Size	0.0599 (0.0382)	0.0560*** (0.0175)	0.0107 (0.0294)
ROA	-1.538*** (0.347)	-0.774*** (0.159)	-0.787*** (0.267)
Volatility	-0.000337 (0.00299)	0.000392 (0.00137)	-0.000564 (0.00231)
After the uprising event			
Collateral	0.242* (0.125)	0.324*** (0.0572)	-0.0378 (0.0963)
Growth	0.0770 (0.0503)	0.0567** (0.0231)	0.0142 (0.0388)
Size	0.0833* (0.0437)	0.0570*** (0.0200)	0.0226 (0.0337)
ROA	-0.730*** (0.257)	-0.428*** (0.118)	-0.137 (0.198)
Volatility	0.0113* (0.00607)	0.00402 (0.00278)	0.00767 (0.00468)
Constant	-0.960 (1.423)	-0.822 (0.652)	-0.443 (1.097)
Observations	144	144	144

Note: TD, LTD, STD are respectively the total, long and short term debt ratios. Regulation is a binary variable that equals 1 if the firm belongs to a regulated sector, 0 otherwise. Po.connexion = is a dummy variable that equals 1 if the firm is politically connected, 0 otherwise. Collateral = fixed assets/total asset. Growth = $\log((\text{total asset}_t - \text{total asset}_{t-1})/\text{total asset}_t)$. Size = $\log(\text{total asset})$, ROA = net income/total assets, volatility = $ROA_t/\sigma ROA_t$.

Standard errors in parentheses.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

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