
The impact of political connections on the level of cash holdings: evidence from Tunisian listed firms

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Abstract: In this empirical study, we examine the relationship between political connections and corporate cash policy in Tunisia. Undoubtedly, politically connected firms gain a variety of economic benefits ranging from the allocation of government contracts to favourable credit terms. In general, politically connected firms are less financially constrained and do not have an incentive to hold liquidity. Therefore, political connections exert a substitution effect on the firm's cash holdings. From the agency perspective, firms with political ties hold more cash than other firms, and their managers have access to money they can use for lucrative perk projects. Through examining the business data of several Tunisian firms 2008–2014, we review the theoretical motives for cash holding by politically connected firms and provide statistical evidence on the substitution effect of political connections on cash holdings. The result confirms a strong statistical relation between the level of cash-holding and political connection. The policy implication of our paper is that political relationships can shape corporate financial decisions.

Keywords: cash holdings; financial constrain; political connections; corporate governance.

JEL codes: G30, G32.

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1 Introduction

Does politically connected firms rely less on their cash holdings to finance their working capital and their investment needs? Corporate liquidity policy constitutes an important part of financial decision-making. Previous studies have examined the factors that influence the cash holding levels of firms (Megginson et al., 2014; Bigelli and Sanchez-Vidal, 2012), more specifically the role of financial constraint. They suggest that financially constrained firms hold higher levels of cash and are aware of the potential

difficulty of accessing external capital markets and raising the necessary funds (Denis and Sibilkov, 2010; Lopez-Gracia and Sogorb-Mira, 2015). In a critical environment firms also prefer to retain their cash holding and rely more heavily on liquid assets when the financial market is increasingly tight and external financing becomes more costly (Song and Lee, 2012).

Recent empirical studies have examined the effect of the operating environment on corporate liquidity policy, with special emphasis on political connections and their benefits (Allen et al., 2005). As pointed out by Infante and Piazza (2014) and Wu et al. (2012), firms with established political ties tend to have a ready access to external funding and manage to negotiate conditions that are more favourable for themselves. Other studies (Faccio, 2006; Goldman et al., 2009; Boubakri et al., 2012) have come to the same conclusion, namely that politically well-connected firms benefit from reduced risk and lower cost of capital. Therefore, firms benefit from political connections (Cooper et al., 2010), fewer financial constraints, and lower cash holding levels. However, this advantage of political connectedness may cause certain agency problems (Chaney et al., 2011). As pointed out in some studies, conflict of interest may arise between managers and shareholders (Chauhan et al., 2018; Harford et al., 2008, 2012) if the political connections are conducted by self-interested managers who use the excess cash flow to extract political benefits such as financing election campaigns and paying bribes. Also, entrenched managers of those firms may be tempted to expropriate liquid assets (Myers and Rajan, 1998) or invest the excess of cash in high-risk and low-return projects (Boubakri et al., 2013), which leads to overinvestment (Ling et al., 2016). In addition, due to political pressure, banks are less inclined to monitor the accounts of politically connected firms and assess the soundness of their projects (Banerji et al., 2018). This conflict of interest can result in poor internal corporate governance, which may affect the liquidity of those firms. In this paper we examine the substitution and complementary effects of political connections on the cash holdings of Tunisian firms. Tunisia was the first Arab country to undergo a successful regime change following the Arab Spring. After the Jasmin revolution in 2011, Tunisia entered a period of political instability, which also affected local businesses. This study contributes to the exiting literature in several ways. First, it contributes to the literature on cash holdings in emergent markets with weak legal institutions and undeveloped capital markets. Second, it extends the existent research to include the factor of political connectedness, focusing on the interaction between the two areas of research: political connections and corporate cash policy. Third, it contributes to the existent literature on the characteristics of politically connected firms and their effect on liquidity policy. Considering the data of non-financial Tunisian firms in the period between 2008 and 2014, our findings confirm that firms with political ties hold less cash, thus confirming the substitution effect of political connection. This effect is more noticeable in the years prior to the 2011 revolution. Additionally, the effect of the political reforms on the firm's liquidity policy depends on the firms' characteristics.

The remainder of the paper is organised as follows. Section 2 presents the literature review, the development of the hypotheses and describes the data and variables of our empirical analysis, Section 3 details the adopted methodology, Section 4 presents the analysis of the empirical results, and Section 5 the conclusions.

2 Literature review and hypotheses

2.1 Cash holdings

Firms hold cash for different reasons: to pay transactions, to be prepared for unforeseen events, and to speculate. Previous studies (Baumol, 1952; Tobin, 1956) have shown that companies set the optimal level of liquidity by comparing the advantages and the disadvantages of holding cash. Miller and Orr (1966) who argued that firms hold cash as a precautionary measure to ensure their safety in view of the uncertainty of future cash flows have reviewed the tradeoff theory. Almeida and Campello (2007) added that firms increase their cash holdings to cover their hedging needs and cope with the adverse effects of macroeconomic crises (Ehling and Haushalter, 2014). As explained in the existent empirical studies on cash holdings, firms tend to hold more cash than the optimum cash level due to counter market imperfections. In a perfect capital market, firms with insufficient internal resources can access external financing at a fair price, which makes cash holding unnecessary. However, in an imperfect capital market, firms have to rely more on internal resources and increase their cash holdings. External financing is more expensive than internal resources due to asymmetric information, agency problems, transaction costs, and financial constraints (Myers and Majluf, 1984; Chen, 2008; Chen and Chuang, 2009).

In an imperfect capital market, financially constrained firms have to issue debt or equity to finance new investments. In addition, investors can lower the price of securities, which results in a substantial increase of the cost of new funds. In addition, obtaining loans is expensive and rather difficult, given the issue of information asymmetry between firms and financial institutions and adverse selection (Martinez-Sola et al., 2013). According to the pecking order theory of capital structure, holding cash is used as a reserve to increase internal resources and meet the financing needs of investment, and to avoid underinvestment if external finance is expensive or rare (Denis and Sibilkov, 2010). Therefore, holding cash allows firms to reduce their transaction costs and avoid financial difficulty (Ferreira and Vilela, 2004). Limiting the amount of liquidity to be held is a strategic decision, as firms holding a high amount of cash have a competitive advantage in terms of market share (Fresard, 2010). Therefore, a positive relationship should be observed between firms that experience financial constraints and the level of liquid assets, especially for those with growth opportunities. Consequently, our hypothesis can be expressed as follows:

H1 Holding cash is more important for firms with financial constraints.

2.1.1 Political connections and corporate cash holdings

Several empirical studies have shown the advantages of political connections such as allocation of government contracts and preferential access to external finance (Goldman et al., 2009; Fisman, 2001). Those firms that have political connections often enjoy preferential treatment and less regulatory oversight when competing for government procurement (Faccio, 2006), in addition to the favourable status they enjoy when

participating in public tenders (Goldman et al., 2009). The firms benefit from the political support they receive from the government agencies (Faccio, 2010), especially in a financial crisis (Al-Najjar, 2013). Politically connected firms are thus determined to maintain these benefits and to further influence legislation through lobbying (Chen et al., 2010b). Preferential access to external funding constitutes another motivation factor to maintain good political relations. It allows those firms to obtain resources with less difficulty and raise funds under better conditions (Chen et al., 2010a). Politically connected firms also receive preferential treatment in the credit market (Khwaja and Mian, 2005; Yeh et al., 2013) and face fewer uncertainties in the financial market (Faccio, 2010; Hill et al., 2013; Tahoun, 2014). Consequently, politically connected firms definitely gain a competitive advantage, perform overall better, and are less exposed to default risk (Li et al., 2008; Yeh et al., 2013). It allows firms to raise funds at a lower cost and suffer fewer budget constraints (Boubakri et al., 2012), which means that they are less inclined to hold cash. Thus, we may expect a substitution effect of political relationships on liquid assets. More specifically, the substitution effect hypothesis can be expressed as:

H2a Firms with political ties hold less cash.

Recent empirical studies have shown that politically connected firms experience larger agency problems and possess weaker corporate governance practices (Boubakri et al., 2013). From the viewpoint of agency, the inflow of funds received by politically connected firm increases their level of liquidity and can create opportunistic managerial behaviour. Myers and Rajan (1998) found that managers can more easily convert cash into private benefits. Similarly, Chaney et al. (2011) argue that entrenched managers are encouraged to reap political benefits and act at the expense of shareholders. Opportunistic managerial behaviour is more likely to occur when politicians force managers to pursue political goals that may diverge from those of the company's shareholders. Moreover, studies have shown that large stakeholders tend to expropriate minority shareholders in order to increase their personal benefits (Qian et al., 2011). Alternatively, from the perspective of corporate governance, agency problems may lead to suboptimal management decisions (Eggers and Hainmueller, 2014) and can distort the firms' investment behaviour (Chen et al., 2011). Entrenched managers may be tempted to use the large free cash flow available to them to make inefficient investment decisions, which leads to overinvestment problems and the squandering of liquid assets (Harford, 1999). In addition, firms who have built political relationships tend to have rather ineffective corporate governance mechanisms. In other words, the board of directors is not effective in monitoring and controlling the firm's managers due to political pressures. Therefore, poor governance can increase the tendency of managers and large shareholders to profit from political connections; they hold large amounts of cash and use it for their personal benefit. Accordingly, we expect firms with political ties to hold more liquidity, which leads to our hypothesis of the following complementary effect:

H2b Firms with political ties hold more cash.

2.2 Data and descriptive statistics

The binary variable, political connections (PCON) represent the firm's political connectivity. Following previous studies (Faccio, 2006; Boubakri et al., 2012) that have defined politically connected firms based on the career of the chairman or the CEO, we identify a firm as being apolitically connected firm if at least one of its majority shareholders or directors is a member of parliament, a government leader, or is politically linked by family or friendship. To construct our sample, we select all trading firms in Tunisia and we exclude financial firms which are regulated and whose accounting principles differ from those used in other industries. The information on the firm's political connections as well as firm's corporate governance variables is hand-collected from annual reports. The financial data of politically connected firms are extracted from various balance sheets and income statements. Our dataset covers the period from 2008 to 2014 and is divided into two sub periods, namely before and after the Jasmine revolution of 2011.

Table 1 Variables measurement

<i>Variables measurement</i>		<i>Expected sign</i>
Liquidity (CASH)	Total cash and cash equivalent divided by total assets	
Political connection (PCON)	Dummy variable that takes 1 if the firm has political ties and 0 otherwise	+/-
Operating cash flow (OPCF)	The total of pre-tax profit, depreciation and amortisation divided by total assets	+/-
Capital expenditure (CAPEXP)	Total capital expenditure divided by to total assets	-
Net working capital (NWCAP)	Total working capital minus total cash to total assets	-
Tangibility (TANGI)	Total tangible fixed assets divided by total assets	-
Growth opportunities (GROWTH)	The percentage change in total sales to total assets	+
Leverage (LEV)	Total debt divided by total assets	+/-
Size (SIZE)	The natural logarithm of total assets	+/-
Dividend (Div)	Dummy variable that is equal to 1 if firm distributes a dividend and 0 otherwise	-
Cash flow volatility (CFV)	The standard deviation of cash-flow to total assets.	+
Independent (IND)	The number of outside directors divided by the total number of directors	+
Large shareholders (LSHARE)	Dummy variable that is equal to 1 if the large shareholder is a family and 0 if it is the government	+/-

To estimate the cash holding levels, different variables are used in this study. Cash flow is a controlled variable as firms that generate more cash flow hold less cash (Chen, 2008), which has been established through the tradeoff theory. However, the pecking order theory postulates that cash flow as an internal resource can be used to finance investment

and cover the firm's expenses during times of crisis (Ozkan and Ozkan, 2004). It also needs to be considered that an increase in cash flow volatility may lead to an increase of cash holdings (Shabbir et al., 2016; Demir and Ersan, 2017). Capital expenditure also affects cash holdings as firms use cash to finance their investments. Net working capital and tangible assets are added in our estimation since financially constrained firms can easily convert high liquid assets into cash (Ferreira and Viela, 2004). They can also sell their tangible assets if they require cash or collateral for debt (Drobotz and Gruninger, 2007). It is also important in controlling growth as firms with higher investment opportunities hold more liquidity (Bigelli and Sanchez-Vidal, 2012; Shabbir et al., 2016) to finance their investments. The effect of debt and size on cash holdings is ambiguous. Highly leveraged firms may hold more liquidity as they have a higher risk of bankruptcy. However, other studies (Shabbir et al., 2016; Ozkan and Ozkan, 2004) have confirmed the substitution effect of debt on cash holdings. The effect of firm size on cash holdings can be explained as follows: large firms are more diversified, more profitable and have a stable stream of cash flows (Opler et al., 1999), therefore they may hold less cash (Bigelli and Sanchez-Vidal, 2012; Ahn and Chung, 2015). However, the pecking order theory postulates that larger firms hold larger amounts of cash than small firms as they have access to more resources (Shabbir et al., 2016). Finally, a dividend dummy variable is added to our estimation because a dividend distribution reduces the amount of retained earnings, resulting in a decrease in the firm's liquidity. Managerial problems can also affect the firm's cash holdings, and two variables are added to our estimation, the independence of the firms and large shareholders dummy variable. Table 1 includes the definition of the dependent and explanatory variables and their expected effect on cash holdings.

Table 2 Descriptive statistics

<i>Variables</i>	<i>Mean</i>	<i>Maximum</i>	<i>Minimum</i>	<i>SD</i>
CASH	0.1242	0.7138	0.0006	0.1404
PC	0.309	1.000	0.000	0.463
OPCF	0.307	0.900	0.052	0.209
NWCAP	0.218	0.956	-0.416	0.238
CAPEXP	0.041	0.504	-0.493	0.073
TANGI	0.305	0.740	0.003	0.188
GROWTH	8.715	422.899	-100.000	55.109
LEV	0.508	1.000	0.000	0.501
DIV	0.714	1.000	0.000	0.453
SIZE	17.772	20.819	15.573	1.197
CFV	0.035	0.403	0.000	0.052
INDP	0.242	0.875	0.000	0.246
LSHARE	0.553	1.000	0.000	0.498

Note: Table 2 table presents the descriptive statistics of the dependent variable (CASH), the independent variable (political connections) and the control variables.

Table 3 Correlation matrix

	CASH	CAPEXP	DIV	GROWTH	INDP	LEV	LSHARE	NWCAP	OPCF	PC	SIZE	TANGI	CFV
CASH	1												
CAPEXP	-0.05	1											
DIV	0.21	-0.01	1										
GROWTH	-0.07	-0.16	0.00	1									
INDP	-0.12	-0.14	-0.11	-0.05	1								
LEV	-0.38	0.19	-0.14	-0.07	0.10	1							
LSHARE	-0.01	0.01	0.02	0.07	-0.24	-0.05	1						
NWCAP	-0.40	-0.27	0.30	0.04	0.11	0.03	-0.03	1					
OPCF	-0.09	0.06	-0.24	-0.02	0.32	0.12	-0.16	-0.14	1				
PC	-0.35	0.12	-0.03	0.03	-0.06	-0.03	0.20	0.05	-0.08	1			
SIZE	-0.04	0.22	-0.32	0.07	-0.03	0.20	0.23	-0.50	0.06	0.14	1		
TANGI	-0.07	0.42	-0.14	-0.06	-0.36	0.08	0.03	-0.50	-0.01	0.00	0.20	1	
CFV	0.37	-0.01	-0.03	-0.03	0.06	-0.12	-0.08	-0.18	0.08	-0.10	0.00	-0.05	1

The descriptive statistics of the dependent variable, liquidity (CASH), the independent variable, political connections (PCON), and all the control variables of the estimation are summarised in Table 2. The data reveals that the average liquidity ratio is 12.42% and its standard deviation is 0.1404. These results are consistent with those reported by Kusunadi (2019) in his international study covering 35 countries (average, 13.3% and SD, 0.132). Some important implications that emerge from the results of the descriptive statistics are summarised as follows: Politically connected firms represent 30.9% of the sample with a standard deviation of 0.463. Tunisian firms are highly leveraged, and the average debt ratio showing the proportion of total debt in total assets is 50.8%. At the same time, more than a half of the Tunisian firms distribute dividends. Finally, there is a wide variation in the firm's growth potential.

Table 3 reports the correlation coefficients between the variables of the estimated model. The correlation between any pair of independent variables is either very weak or non-existent. No high correlation between the independent variables indicates the absence of a multi-collinearity problem. Therefore, the serial correlation among the variables does not pose an issue. We observe a negative correlation between political connection and the level of cash holdings as evidenced by the low negative correlation coefficient. This shows that firms with political ties have lower cash holding levels. However, there is a positive correlation between the cash holding level and the dividend payout.

3 Methodology

3.1 Model 1

The first model is used to test the hypothesis that financially constrained firms hold more cash. According to the literature review, we expect firms with financial constraints to behave differently and to adopt a different cash holding policy. The model explains the level of cash held by firms based on their internal resources (such as operating cash flow, net working capital, etc), size and investment opportunities. Other factors affecting the firm's cash holding including volatility of cash flow, capital expenditure, tangibility, dividend and leverage are added to the empirical specification.

To test Hypothesis 1, we use two alternative measures of financial constraints: leverage and listing. The first classification assumes that highly leveraged firms face higher external financing costs and have difficulty accessing additional financial resources (Whited, 1992; Mills et al., 1994; Aivazian et al., 2005). Thus, we split our sample into constrained and non-constrained firms using a dummy variable, leverage (LEVR) that is equal to 1 if the leverage ratio is greater than the sample median, and 0 otherwise.

Further, to ascertain the robustness of our results, model 1 is re-estimated using an alternative measure of financial constraint: the firms' listing. Firms in the expansion stage that have been listed only for a few years are classified as financially constrained; they have to invest more (Baker et al., 2003) and require costly external financing. However, firms listed for longer are considered in a mature stage of their business life cycle with reduced investment activity. Therefore, we divide our sample based on the dummy variable, listing (LIST) that is equal to 1 if the number of years the firm has been listed in the stock market is less than the sample median and 0 otherwise.

Therefore, equations (1a) and (1b) are used to calculate the determinants of the firms' cash holdings and the impact of financial constraints on the level of the cash holdings.

$$CASH_{it} = \beta_0 + \beta_1.OPCF_{it} + \beta_2.NWCAP_{it} + \beta_3.CAPEXP_{it} + \beta_4.TANG_{it} + \beta_5.GROWTH_{i,t} + \beta_6.LEV_{it} + \beta_7.DIV_{it} + \beta_8.SIZE_{it} + \beta_9.VOL_{it} + \varepsilon_{it} \quad (1a)$$

where i indicates the value of the firms and t represents the average value (1998–2014).

$$CASH_{it} = \beta_0 + \beta_1.OPCF_{it} + \beta_2.NWCAP_{it} + \beta_3.CAPEXP_{it} + \beta_4.TANG_{it} + \beta_5.GROWTH_{i,t} + \beta_6.LIS_{it} + \beta_7.DIV_{it} + \beta_8.SIZE_{it} + \beta_9.VOL_{it} + \varepsilon_{it} \quad (1b)$$

3.2 Model 2

According to the literature reviewed in Section 2, in an imperfect capital market internal and external financing are not perfect substitutes; therefore, constrained firms will have a greater incentive to build political ties in order to benefit from easy access to external funds at preferential rates (Khwaja and Mian, 2005). However, political connections can aggravate the agency problems, and affect a firm's cash holdings through two opposite effects. Following the approach of Saeed et al. (2016), we explore the substitution and the complementary effect of political connections on cash holdings and re-estimate equation (1) by adding PC as independent variables and the governance variables to control the managerial agency problems. Our model is thus defined as follows:

$$CASH_{it} = \beta_0 + \beta_1.PC + \beta_2.OPCF_{it} + \beta_3.NWCAP_{it} + \beta_4.CAPEXP_{it} + \beta_5.TANG_{it} + \beta_6.GROWTH_{i,t} + \beta_7.LEV_{it} + \beta_8.DIV_{it} + \beta_9.SIZE_{it} + \beta_{10}.VOL_{it} + \varepsilon_{it}$$

where PC is a dummy variable that takes the value of 1 if the firm has political ties, and 0 otherwise.

To estimate equation (2), we divide our study period into two sub-periods (before and after the 2011 revolution) in order to assess the impact of political uncertainty on the firms' corporate liquidity. In fact, Tunisia experienced a period of great political instability in January 2011 following the removal of the Ben Ali regime, the election of a new president in October 2011, and several other changes in the government between 2012 and 2014. As a result, politically connected firms were negatively affected.

3.3 Model 3

In this stage, equation (2) is re-estimated to investigate whether the effect of political connections on the firms' liquidity differs from their characteristics by adding the interaction terms of political connections with control variables. Our model is thus defined as follows:

$$\begin{aligned}
CASH_{it} = & \beta_0 + \beta_1.PC + \beta_2.SIZE_{it} + \beta_3.GROWTH_{i,t} + \beta_4.NWCAP_{it} + \beta_5.OPCF_{it} \\
& + \beta_6.CAPEXP_{it} + \beta_7.LEV_{it} + \beta_8.DIV_{it} + \beta_9.TANG_{it} + \beta_{10}.VOL_{it} \\
& + \beta_{11}.INDP_{it} + \beta_{12}.LSHARE_{it} + \beta_{13}.PC \times SIZE_{it} + \beta_{14}.PC \times GROWTH_{i,t} \\
& + \beta_{15}.PC \times NWCAP_{it} + \beta_{16}.PC \times OPCF_{it} + \beta_{17}.PC \times CAPEXP_{it} \\
& + \beta_{18}.PC \times LEV_{it} + \beta_{19}.PC \times DIV_{it} + \beta_{20}.PC \times TANG_{it} + \beta_{21}.PC \times VOL_{it} \\
& + \beta_{22}.PC \times INDP_{it} + \beta_{23}.PC \times LSHARE_{it} \varepsilon_{it}
\end{aligned}$$

To estimate all the regression models, we rely on panel data using the EGLS (estimated generalised least square) approach to control for unobserved heterogeneity and to solve potential endogeneity of variables highlighted in the literature on cash holdings (Ozkan and Ozkan, 2004; Dittmar and Servaes, 2003).

4 Empirical results

The estimation results of model 1 calculating the determinants of the Tunisian firms' cash holdings are reported in Table 4. The findings reveal that the majority of the variables (five of eight variables) are statistically significant. Moreover, the statistically significant variables confirm the findings of prior studies in the literature. For instance, the coefficient of CAPEXP is positive and significant at a level of 10 %, indicating that an increase in capital expenditure requires a high level of cash. In addition, the presence of tangible assets is associated with the absence of cash holdings, which is consistent with the results of Uyar and Kuzey (2014). The volatility of cash flows has a positive impact on cash holding, and this effect is statistically significant. This result corroborates with previous empirical findings (Shabbir et al., 2016; Bigelli and Sanchez-Vidal, 2012). In this model, the variable of financial constraints is of particular interest; thus, we will focus on its estimated value. Table 4 reports the regression results using the two alternative measures of financial constraints, namely leverage (LEV) and listing (LIS). Generally speaking, our results are statistically and economically robust while using alternative measures of financial constraints effects on cash holding. As revealed in panel A, the estimated coefficient of the variable LEV is 0.015 and significant at a level of 5%. This coefficient suggests that the firms possess effective financing channels. Interestingly, the estimated coefficient of the variable LIS is negatively statistically significant with a value of -0.0076. In other words, as the firms become well established, they have less need to hold cash. Therefore, as purported by some authors (Ferreira and Vilela, 2004), these established firms do not include financial difficulty in their future planning. These results confirm our hypothesis with regards to cash holding and financial constraints, whereby financially constrained and less established firms hold more cash. An important question to ask is whether listing age is a good measure of a firm's financial constraints. Given the underdeveloped financial market in Tunisia, there are reasons to believe that the rationale behind this type of behaviour is that these firms are counting on alternative channels to help them raise the necessary capital.

Table 4 Determinants of corporate cash policy

<i>Variables</i>	<i>Equation 1</i>	
	<i>Panel A</i>	<i>Panel B</i>
SIZE	-0.020619 (-1.884963)*	-0.019557 (-2.302766)**
GROWTH	-7.21E-06 (-0.209420)	-3.22E-05 (-0.876590)
NWCAP	-0.024466 (-0.781789)	-0.019653 (-0.685619)
OPCF	0.009708 (0.393037)	-0.005308 (-0.211209)
CAPEXP	0.093375 (1.835288)*	0.091859 (1.864589)*
DIV	-0.007622 (-0.974888)	-0.007923 (-0.945890)
TANGI	-0.145516 (-3.093224)***	-0.128720 (-2.661945)***
CFV	0.133673 (2.451019)***	0.166070 (2.802046)***
LEV	0.015048 (2.531558)***	
LIS		-0.007571 (-1.724060)*
C	0.526659 (2.825851)***	0.516779 (3.570014)***
R-square	0.922609	0.941615
F statistics	46.66385*** (0.0001)	63.12843*** (0.0001)
Observations	186	186

Note: T-values are shown in brackets, ***, ** and * represent statistical significance at the 1, 5 and 10% levels, respectively.

Table 5 reports the estimation results of the effect of political ties on corporate cash holdings. Column 1 lists the results for 2008–2014, column 2 lists the results of 2008–2011, and column 3, 2011–2014. Four important conclusions are drawn from the comparison of the results of the three specifications. Firstly, the coefficient of the variable PC, our main variable of interest, is negatively and strongly statistically significant in all three specifications, the period before the revolution 2008–2011 having the more pronounced effect. Our results suggest that politically connected firms hold less cash compared to other firms. This correlation between political connection and cash holdings is well documented in the literature, particularly in reference to the markets in developing countries (Kusnadi, 2019; Boubakri et al., 2012; Lin et al., 2018). Firms that wish to maintain their political connections must engage in rent-seeking activities by allocating significant resources, which is detrimental to the shareholders' interests. This issue is made worse by the lack of well-functioning institutions in the country, as evidenced in the larger coefficient value before 2011. The second finding that can be drawn from the results listed in Table 5 is that the firms' size and operational cash flow are not statistically significant before the revolution, but negative and statistically significant in the years afterwards. The increased political uncertainty in the years 2011–2014 means that the effect of the firms' political connections on cash holdings is less

pronounced, especially so in the case of small firms with low cash flow. This finding corroborates with Kusnadi (2019), who investigate the effect of political connections on cash holdings, and he found that the coefficient on firm's size is negative and statistically significant for the firms located in emerging markets. The third finding relates to the impact of cash volatility on liquidity. The cash volatility becomes less economically significant on cash holdings in the years after the revolution, 2011–2014. More specifically, the estimated coefficient of 0.652 dropped to 0.372 after 2011, which indicates that a reduced level of cash volatility among the firms. This result is not surprising given the strong relationship between political connections and cash holdings. Lastly, the relationship between cash holdings and the proportion of independent directors is negative before and after the revolution, which is does not conform to the literature and our expectation, namely that the effect is stronger in the post-revolutionary period. One plausible explanation is that most firms appoint individuals as directors whose good political connections can serve as a form of capital to the firm.

Table 5 The effect of political connections on cash holdings

Variables	Entire period	Before the revolution	After the revolution
	Panel A	Panel B	Panel C
PC	−0.088079 (−8.016035)***	−0.108025 (−7.663794)***	−0.081726 (−7.104573)***
SIZE	−0.013496 (−2.385455)***	−0.000303 (−0.053531)	−0.028143 (−4.240026)***
GROWTH	−7.19E-05 (−0.735682)	−0.000234 (−2.379089)***	9.20E-05 (0.653233)
NWCAP	−0.283513 (−9.249675)***	−0.341590 (−7.133168)***	−0.350463 (−10.78993)***
OPCF	−0.061490 (−2.869723)***	−0.039358 (−1.523100)	−0.112885 (−5.728201)***
CAPEXP	0.030176 (0.389226)	0.015949 (0.175319)	−0.040281 (−0.351580)
DIV	0.065208 (6.087015)***	0.077558 (6.257277)***	0.056215 (7.149902)***
TANGI	−0.128132 (−3.247729)***	−0.193405 (−3.679259)***	−0.194157 (−4.033885)***
CFV	0.452233 (3.764320)***	0.651936 (2.763278)***	0.371909 (3.289656)***
LEV	−0.059030 (−5.830939)***	−0.066518 (−5.469453)***	−0.066427 (−5.531348)***
INDP	−0.030850 (−1.381712)	−0.055771 (−2.818037)***	−0.075175 (−2.478302)**
LSHARE	−0.006930 (−0.703451)	−0.016897 (−1.404252)	0.001053 (0.089167)
C	0.475051 (4.415274)***	−0.108025 (−7.663794)***	0.818709 (6.457166)***
R-square	0.620564	0.769327	0.748743
F statistics	21.67022*** (0.0001)	23.34593*** (0.0001)	21.85326*** (0.0001)
Observations	186	186	186

Note: T-values are shown in brackets, ***, ** and * represent statistical significance at the 1, 5 and 10% levels, respectively.

Table 6 The effect of Tunisian firm's characteristics on the relationship between political connection and cash holdings

<i>Variables</i>	<i>Model 3</i>
Independent variables	
PC	-0.093226 (-0.473804)
SIZE	-0.006469 (-0.900475)
GROWTH	-1.31E-05 (-0.080809)
NWCAP	-0.384600 (-8.784543)***
OPCF	-0.109170 (-3.588887)***
CAPEXP	-0.120080 (-1.224012)
DIV	0.070838 (4.564922)***
TANGI	-0.274233 (-3.897533)***
CFV	0.584743 (3.398088)***
LEV	-0.078781 (-5.379858)***
INDP	-0.078518 (-1.794289)*
LSHARE	0.010556 (0.614885)
PCSIZE	-0.011755 (-1.147874)
PCGROWTH	-3.02E-05 (-0.176271)
PCNWCAP	0.352234 (6.872123)***
PCOPCF	0.162205 (3.717231)***
PCCAPEXP	0.359934 (2.979506)***
PCDIV	-0.094213 (-5.224628)***
PCTANGI	0.290415 (3.919676)***
PCCFV	-0.518246 (-2.750304)***

Note: T-values are shown in brackets, ***, ** and * represent statistical significance at the 1, 5 and 10% levels, respectively.

Table 6 The effect of Tunisian firm's characteristics on the relationship between political connection and cash holdings

<i>Variables</i>	<i>Model 3</i>
PCLEV	0.069983 (4.311198)***
PCIND	-0.009101 (-0.167524)
PCLSHARE	0.035166 (1.576530)
C	0.458227 (3.079129)***
R-square	0.718333
F statistics	16.41056*** (0.0001)
Observations	186

Note: T-values are shown in brackets, ***, ** and * represent statistical significance at the 1, 5 and 10% levels, respectively.

To investigate whether the effect of political connections on the firms' liquidity differs from their characteristics, we re-examine model 2 by adding the interaction terms of political connection with the control variables. The resulting model 3 is fitted and estimated. The estimated results are summarised in Table 6. A comparison of the coefficients of model 2 with those of model 3 shows that the common control variables have remained stable in terms of the sign, statistical and economic significance. More specifically, the interaction terms between political connection variable and leverage (PC x LEV) is positive and statistically significant. This result suggests that politically connected firms with high leverage hold more cash. In addition, the interaction term between the PC variable and the dividend is negative and statistically significant. This finding suggests that those firms that distribute dividends also have fewer cash holdings. However, the coefficient estimates of the other interaction terms switch sign. The result indicates that in imperfect financial markets with weak institutions, politically connected firms make use of their preferential treatments to facilitate their access to cash, as stated in Wu and Rui (2012).

5 Conclusions

In this paper, we investigate the determinants of the cash holdings of Tunisian firms, with a particular focus on the factors of financial constraints, political connections and political instability. The empirical findings show that firms with political connections are less likely to possess high levels of cash holdings. Similarly, those firms are more likely to have higher capital expenditures, higher net working capital and larger shareholders. More specifically political connected firms have higher leverage and this finding is consistent with Belghitar et al. (2019) showing that political connections conduct firms to use more leverage in their capital structure. In contrast, firms with political ties are less likely to show signs of growth potential, despite the financial and political capital they have at their disposal. These findings are in line with those made by Xu et al. (2013) in

respect to Chinese firms. The practical implication of this study is that political connections help firms in the short run by allowing them to procure the necessary capital for their daily operations; however, these connections do not resolve the inefficiency inherent to such firms. This is shown by the statistically negative coefficient on the variable growth potential in all of our modelling specifications.

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