

# Governance Contribution in Explaining Cash Holding and Firm Value Case in Tunisian Firms

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## Abstract

**This study investigates the contribution of governance in explaining cash holding in the Tunisian limited companies for the period spanning the years between 2010-2014. Based on a sample of 80 firms over the period 2010–2014, our results show that the relationship between the size of the board of directors and cash is non- significant, and that the relationship between cash and duality depending on cash measure used as well as the relationship between three cash measures and the presence of external directors have a negative and a non-significant coefficient. The influence of the majority shareholder is negative with the three cash measures, but only significant with Cash2 and CCC. Managerial ownership has no influence on cash. The relationship between cash and institutional ownership is positive and significant in 3 models, which implies that firms with important institutional investor hold an important level of cash. The influence of cash on firm value shows the following results. First, cash has a positive and significant influence on the shareholder value. Second, cash has a negative and significant influence on the partnership value. Finally, cash has a positive influence on the four measures of value allocation, but is only significant with the value absorbed by the State.**

**Keywords:** *Cash, Ownership Structure, Board of Directors, Value Creation, Shareholder Value, Partnership Value;*

## I. INTRODUCTION

In a perfect market, holding a large amount of money is irrelevant. Companies can have an easy access to capital markets to finance their projects. In this context, the capital structure and the liquidity level are not relevant. Holding cash would be similar to an investment in a project that generates no value to shareholders. In other words, a project has zero net present value ([1] - [2]).

The capital market is actually imperfect. Indeed, the relaxation of the hypothesis of market perfection and the consideration of corporate tax, transaction costs, bankruptcy costs, agency costs and information asymmetry, all these factors have led a revolution in the analysis of financial decisions.

In fact, holding cash generates costs. On the one hand, the company yields an opportunity cost if it holds the cash in the

form of currency because the nominal yield of the currency is zero. On the other hand, the company will bear a liquidity premium when it holds liquid assets. This holding corresponds to a mobilization of resources on less productive assets. Thus, the company can mobilize this cash in better-paid assets

Holding liquidity is an alternative offered for companies with restrictive debt options. Ozkan and Ozkan (2004) [3] stressed the fact that cash allows the company to avoid the risk of rejecting profitable projects and to escape the costs of financial distress.

Mayers and Majloun (1984) [4] showed that information asymmetry makes the access to external funds difficult, thereby pushing external backers to demand high returns. Similarly, Opler and Titman (1994) [5] pointed out that the severity of asymmetry of information about access to finance and the cost of financial distress for firms with specific investments, such as research and development, make it necessary to hold cash. As a result, companies with specific investments are required to hold cash to meet their financing needs given that access to external funds in such situation proves to be difficult.

Agency theory provides an explanatory view of the phenomenon of cash holding through the discretionary power of managers. Indeed, managers have a strong penchant for lucrative investment. Jensen (1986) [6], pointed out that the cash held can be used by executives regardless of the willingness of shareholders to finance projects with negative net present value while avoiding market discipline. In such a situation, it would be preferable for surplus cash to be paid in the form of a dividend to shareholders so that, if necessary, the company could resort to capital increases so as to finance its new investments.

Afza, and Nazir (2007) [7] predict that the manager wants to accumulate cash to increase the amount of assets under their control. Cash held may increase executive discretion, providing managers with a shield that enables them to escape the scrutiny of external finance.

Cash plays a decisive role in various economic and financial scenarios. Fresard (2010) [8] showed that cash allows companies to avoid competition and improve their value. In this context, Izadinia and Rasaeiyan (2010) [9]

demonstrated a positive relationship between cash and company value.

All this considered, this study seeks, first, to identify the impact of cash holding, corporate governance and firm value on Tunisian dataset. For this purpose, the sample we provide in this paper is based on listed and unlisted Tunisian companies.

The remainder of this paper is organized as follows. Section two provides the literature review and the hypotheses. Section three describes the methodology adopted. Section four exposes the findings. Finally, section five presents the conclusion.

## II. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

### *A Cash and Governance*

The considerable collapse of large companies and the financial crisis have fuelled the debate on corporate governance and its repercussions on business decisions. In this regard, Naoki (2012) [10] showed that the severe financial crisis in 2008 raised financial concerns among companies to reduce spending and become more cautious with respect to cash reserves and its consequences on firm value.

During this decade, the disciplinary role of governance mechanisms was widely studied, reflecting cultural differences and the variety of legislative and institutional systems across countries. Indeed, board of directors and ownership structure are considered the most effective internal mechanisms when it comes to reducing the agency costs arising from the separation of ownership and management of the firm ([11]-[12]). In this context, we study the effects of these two mechanisms on cash and firm value

#### 1) Cash and Board Characteristics

The financial literature identifies a number of criteria associated with the effectiveness of the board of directors. These criteria are the size, the composition and the accumulation of the duties of both the Chief Executive Officer and the President.

The size of the board of directors is determined by the number of directors. It is a field of action for the company and its managers. Some authors show that a large board size allows for the pooling of expertise and knowledge resources, thus enabling cost reduction and easy access to information ([13], [14]- [15]). Therefore, a large size of the board of directors can limit the level of cash held. However, other authors suggest that a small board size ensures effective control over a large board and ensures better coordination of supervisory effort ([16]). As a result, a smaller board size may increase the level of cash held.

H1: There is a significant negative relationship between board of size and cash

The idea of entrusting the role of the board chairman and that of the general manager to the same person has aroused a significant interest in the financial literature. In fact, merging these two functions is one of the characteristic features of

French and American board of directors. In the United Kingdom, however, the two functions are often assigned to two different people.

Rachdi et al. (2009) [17] stressed that the study of the relationship between duality and performance has produced a combination of agency theory ([11]-[18]) and the stewardship theory ([19]-[20]).

The first theory is in favor of the separation of the two functions, which reduces agency costs and improves the firm's performance. However, the second theory advocates the superiority of the duality of decision and control functions, which could enhance the performance of firms.

Drobetz and Gruninger (2007) [21] showed that cash ratio of a firm is much higher if the CEO also occupies the position of the board chairman.

H2: There is a negative relationship between duality and cash.

Charreaux (1997) [22] postulated that the protection of shareholder's interests depend the composition of the board of directors. The presence of external director affects the degree of autonomy of the board of directors. It can contribute to effective monitoring which can in turn mitigate informational asymmetry and reduce under-pricing ([23]).

Independent directors are more likely to protect shareholders' interests from managerial opportunism ([24]-[25]) and to improve the quality of managerial decisions and corporate performance ([26],[27]-[28]).

Weisbach (1988)[29], Godard (1996)[30], Caby and Hirigoyen[31] (1997) foresaw that external administrators are recruited for their skills. In other words, they have the necessary skills conducive to a better control of management and to the prevention of cash accumulation.

H3: There is a negative relationship between board independence and cash

#### 2) Cash and Ownership Structure

The ownership structure is one of the main variables that affect cash. Their impact depends on the category of the shareholders and the level of property. Consequently, the ownership structure does not influence similarly cash holding.

The presence of a shareholder majority is not only an effective tool for controlling managers but also a means to converge their interests with those of other shareholders. Indeed, Shleifer and Vishny (1986) [32] admitted that these shareholders play an active role in the governance. Moreover, the presence of a controlling shareholder can put pressure on the managers by encouraging them to act according to the interest of the shareholders and to maximize firm value.

However Fama and Jensen (1983) [24] pointed out that concentration of capital leads to limited efficiency and lower profits. Concentration of capital can lead to major problems when the interests of large shareholders do not fit with those of other stakeholders.

The concentration of ownership could be an important variable to explain cash holding. Indeed, the literature shows that the concentration of shareholders reduces the discretion

of the managers and, consequently, decreases the conflict between managers and shareholders.

Kusnadi (2005) [33] showed that, for Singaporean companies, the level of cash drops with the concentration of shareholding. Similarly, Ferreria and Vilele (2004) [34] founded the same result for companies in the 12 countries of the European Monetary Union. Moreover, Guney et al (2007) [35] showed a negative relation between the concentration of shareholders and cash for an international sample.

H4: There is a negative relationship between concentration of shareholders and cash.

Jensen and Meckling (1976) [11] pointed out that the share of capital held by executives can reconcile the interests of the executives with those of the shareholders. Indeed, fitting the interests of the managers with those of the shareholders makes it possible to reduce conflicts and agency problems. Moreover, these authors proved that managerial ownership can reduce the opportunistic behavior of managers and urge them to maximize firm value. Thus, firm value increases with the percentage of capital held by the managers.

Harford and al., (2008) [36] showed that, in the United States, the low levels of cash held by the least governed firms stems, logically, from the managerial decision to spend all the cash flow already gathered. This managerial behavior reduces firm value.

Ozkan and Ozkan (2004) [3] studied the impact of managerial ownership on the level of the cash held by firms in the United Kingdom for the period between 1984-1999. They proved that the level of cash and managerial ownership structure are negatively correlated.

Drobtz and Gruninger (2007) [21] show that manager ownership affects cash in two different ways. First, a higher percentage of managerial property reduces a cash ratio. Second, the liquidity actually ratio increases when the absolute value of managerial holdings in a firm grows. The two opposite effects can be interpreted, respectively, as an alignment effect and the risk aversion effect.

Previous studies of ([37], [38], [39]-[36]) confirm a negative relationship between cash and managerial ownership. This relationship is explained by the alignment effect. Here, the manager prefers to distribute cash instead of accumulating it in reserve.

H5: There is a positive relationship between managerial ownership and cash

Several researchers have examined the role of institutional investors and the ways they impact on the performance of the company. This impact is ambiguous ([40]-[41]). First, these investors are, in fact, involved in the control and management of companies ([42]-[43]) and can, accordingly, influence organizational patterns by allowing companies to benefit from their expertise in various fields. Second, the existence of profitable business relationships and investment relations place institutional shareholders in a conflicting situation, which is generally associated with a reduction in rigorous control and a fall in value ([37]-[44]). Finally, Agrawal and Knoeber (1996) [45] and Mínguez-Vera and Martín-Ugedo

(2007) [46] prove a lack of influence of institutional ownership on the performance of the firms.

These investors promote shareholder value through their knowledge, which improves the performance of the firm. Moreover, their excitement makes it possible to intensify the control exercised over the manager through limiting her discretionary margin and reducing the cash.

H6: There is a negative relationship between institutional investors and cash

### *B Cash and Firm Value*

The Financial literature reveals two contradictory positions with regards to cash balances. Myers and Majluf (1984) [4] suggested that firms operate optimally when they have sufficient liquidity to avoid the use of external capital and its costs. However, Jensen (1986) [6] suggested that firms operate optimally when they have minimal cash balances because excess in cash balances results in agency costs but does not bring any benefit of flexibility.

For their parts, DeAngelo and DeAngelo (2007) [47] reconciled these two proposals. They considered that cash has benefits and agency costs. The accumulation of liquidity is, therefore, no longer uniformly beneficial. In addition, investors exert pressure on companies in order to limit cash balances and mitigate agency costs. They encourage managers to maintain sufficient cash to finance moderate needs.

Cristina Martínez-Sola and al (2011) [48] studied the effect of holding cash on firm value for a sample of 472 US industrial firms during the period between 2001-2007. Their results show the existence a level of cash holding that maximizes firm value. More specifically, they showed empirically that the optimal level is about 14%. In addition, the reduction of this level reduces firm value.

Ghorbani and Adili, (2012) [49] proved the existence of an inverse relationship between the cash and the value of the firm in a state of asymmetry of information.

Cash plays an important role in various economic and financial scenarios. In a situation of underinvestment ([50] and a period of strong growth prospects [51]. Cash reserves can play a positive role in mitigating the frictions of financing and increasing firm value.

Izadinia and Rasaeiyan, (2010) [9] proved that the cash and the value of the company were positive and significant correlated for listed companies on the stock exchange of Tehran.

H7 a: There is a positive relationship between cash and firm value.

H7 b: There is a positive relationship between cash and the distribution of value

### *C Control Variables: Other Factors Influencing Cash*

Guney et al (2007) [35] pointed out that early works focusing on cash holdings reveal factors specific to the firm and others related to its environment. These factors have a positive as well as a negative influence on cash holding. The

size of company, dividend and debt are identified in prior literature as potentially influencing cash holding

The size of company is an important determinant of cash level. Studies made in different contexts have shown divergent results. Indeed, ([52],[34],[53]-[54]) proved a negative relationship between cash and firm size. However ([55]-[56]) proved a positive relationship.

The relationship between debt and cash remains ambiguous. A negative relationship shows that the company reduces cash in view of its ability to have debt eased [57]-[55]. However, a positive relationship shows that the company increases its cash flow with the increase in debt for against financial distress and bankruptcy [58].

Companies that pay dividends can raise funds easily and at low cost because they can reduce their dividend payments [1]. They do not need to hold large amounts of money. Therefore, the relationship between dividend payments and cash is negative. Marchica and Mura (2007) [59], and Afza and Adnan(2007) [56] proved this negative relationship. However, cash holdings can also increase dividend payments. Companies that pay dividends can reduce or cut dividends when they have a liquidity shortage. Thus, holding large sums of money allows companies to avoid these situations. In this case, the relationship between dividend payments and cash is positive. Drobetz and Grunger (2007) [21] proved this positive relationship.

### III. DATA AND METHODOLOGY

#### A. Data Set Explanation

Our sample consists of 80 public limited companies, of which 32 companies are listed on the Tunis stock exchange and 48 are unlisted companies, for the period between 2010-2014. The data are collected through the website of the stock exchange, the advice of the financial market and through the offices of expert accountants.

#### B. Research Methodology

The regression of panel data was used to investigate hypotheses 1 through 7, while taking into account additional factors that may influence cash of Tunisian companies and firm value. In model 1, cash is regressed on corporate governance mechanisms relating to the board of directors (size, duality and board independence), and ownership structure (inside ownership, concentrated ownership and institutional investors) with several additional control variables (size, debt and dividend). In model 2, firm value is regressed on cash, corporate governance mechanisms relating to the board of directors (size, duality and board independence), and ownership structure (inside ownership, concentrated ownership and institutional investors) with several additional control variables.

The estimated regression models are:

$$\text{Cash} = \beta_0 + \beta_1 \text{SIZE}_{it} + \beta_2 \text{DUAL}_{it} + \beta_3 \text{INDEP}_{it} + \beta_4 \text{CONSOWN}_{it} + \beta_5 \text{INSD}_{it} + \beta_6 \text{INS OWNE}_{it} + \beta_7 \text{DET}_{it} + \beta_8 \text{DIV}_{it} + \beta_9 \text{SIZE FI}_{it} + \varepsilon_{it} \text{ (Model1)}$$

$$\text{FV} = \beta_0 + \beta_1 \text{Cash}_{it} + \beta_2 \text{SIZE}_{it} + \beta_3 \text{DUAL}_{it} + \beta_4 \text{INDEP}_{it} + \beta_5 \text{CONSOWN}_{it} + \beta_6 \text{INSD}_{it} + \beta_7 \text{INS OWNE}_{it} + \beta_8 \text{DET}_{it} + \beta_9 \text{DIV}_{it} + \beta_{10} \text{SIZE FI}_{it} + \varepsilon_{it} \text{ (Model2)}$$

$i = 1, 2, \dots, 80$  and,  $t = 2010, 2011, \dots, 2014$

□  $i$ : number of firms

□  $t$ : the estimation period

Table 1 Definition of the variable

Definitions
<b>Dependent Variables for model1</b>
Cash1: <i>Log of (Total Liquidity and Liquidity Equivalent / Net Assets) Ratios [33]. Or Net assets are total assets minus cash and cash equivalents</i>
Cash2: <i>Current liquidity ratios (short-term assets / short-term liabilities)[60].</i>
CCC: <i>Cash conversion cycle is measured by adding the average collection period and the inventory turnover in days and deducting the average payment period [60].</i>
<b>Dependent Variables for mode2</b>
ROA: <i>The return on assets is the ratio of net income and total assets [61].</i>
VA: <i>is Added Value measured as the difference between Turnover and Intermediate Consumption [62].</i>
Emp/AV: <i>The creation of value for employees is the proportion of added value absorbed by personnel costs and the participation of employees in the fruits of the added value expansion [62].</i>
C/AV: <i>The Creation of value for lenders Proportion of the added value devoted to the payment of interest and similar expenses [62].</i>
S/AV: <i>The creation of value for the state, is the proportion of value added devoted to the payment of taxes, Assimilated payments, Income tax[ 62].</i>
D/AV: <i>The Value creation for shareholders is the percentage of added value paid to shareholders (dividend) [62].</i>
<b>Independent variables</b>
SIZE: <i>the size of the Board of Directors is measured by the number of directors who sit on the board of directors [63]-[64].</i>
DUAL: <i>dummy variable equal to 1 when the board chairman and CEO positions are held by one individual and 0 otherwise ([65],[66]-[67])</i>
INDEP: <i>the proportion of independent external directors serving on the board [68].</i>
CONSOWN: <i>Cons own is equal to the ratio of the number of shares held by the majority shareholder to the total</i>

<i>number of shares</i> [69].
INSD: <i>is ownership of a manager is the ratio of the number of shares held by a manager to the total number of shares</i> [36].
INSOWNE: <i>is The share of capital held by institutional investors is the ratio between the number of shares they hold institutional investors to the total number of shares of the firm</i> [36].
Control variables
DIV: <i>Is a variable that takes the value of 1 when the company distributes a dividend and 0 if no</i> [34].
DET: <i>Debt is the ratio between the book value of long-term and short-term debt to The book value of total assets</i> [45]-[70]
SIZE FI: <i>Company size is the natural logarithm of size of total assets</i> [54].

C/AV	1.203	1.811	-0.041	5.945
EMP/AV	0.994	1.000	-2.374	4.923
D/AV	0.5138	0.846	0	9.456

Note: **Cash1** is Log of (Total Liquidity and Liquidity Equivalent / Net Assets) Ratios. **Cash2** is Current liquidity ratios (short-term assets / short-term liabilities). **CCC** is Cash Conversion Cycle. It is measured by adding the average collection period and the inventory turnover in days and deducting the average payment period. **Size** is the size of the Board of Directors. It is measured by the number of directors who sit on the board of directors. **DUAL** is dummy variable equal to 1 when the board chairman and CEO positions are held by one individual and 0 otherwise. **INDEP** is the proportion of independent external directors serving on the board. **CONSOWN** is equal to the ratio of the number of shares held by the majority shareholder to the total number of shares. **INSD** is ownership of a manager is the ratio of the number of shares held by the manager to the total number of shares. **INSOWN** is the ratio of the number of shares held by institutional investors to total number of shares of the firm. **DET** is the ratio between the book value of long-term and short-term debt to the book value of total assets. **SIZE FI** is the natural logarithm of total assets. **DIV** is a variable that takes the value of 1 when the company distributes a dividend and 0 if no. **ROA** is the return on assets. It is the ratio of net income and total assets. **AV** is Added Value measured as the difference between Turnover and Intermediate Consumption. **S/AV** is the creation of value for the state the proportion of value added devoted to the payment of taxes, Assimilated payments, Income tax. **C/AV** is the Creation of value for lenders Proportion of the added value devoted to the payment of interest and similar expenses. **Emp/AV** is the creation of value for employees. It is the proportion of the added value absorbed by personnel costs and the participation of employees in the fruits of added value expansion. **D/AV** is the Value creation for shareholders the percentage of added value paid to shareholders (dividend).

Table 2 reports the descriptive statistics of our research variables. The mean level of Cash1 of Tunisian firms is 0.0915. Its maximum value is 0.71 for a listed company operating in the transport equipment trade. Its minimum value is 0.00089 recorded for a listed company that operates in the development of pharmaceutical products.

The average level of Cash 2 is 2.52. The minimum value for Cash 2 is 0.12329 for an unlisted company. The maximum value is 37.301. This value is documented for an unlisted industrial company.

The average Cash Conversion Cycle of Tunisian company is 259.0448 days. The shortest cash conversion cycle is (1332, 741) days at a listed company. The longest cash conversion cycle is 3923.956. This cycle is recorded at an unlisted industrial company.

#### IV. EMPIRICAL RESULTS

##### A. Descriptive Statistics

Table 2 Descriptive statistics for variables used of our research variables

VARIABLES	MEAN	S D	MIN	MAX
CASH1	0.091	0.121	0.000089	0.71
CASH2	2.524	3.215	0.123	37.301
CCC	259.044	506.045	(1332.741)	3923.956
SIZE	7.615	2.097	4	12
DUAL	0.680	0.467	0	1
INDEP	0.079	0.134	0	0.9
CONSOWN	0.516	0.174	0	0.888
INSD	0.148	0.166	0	0.755
INS OWNE	0.118	0.114	0	0.594
DET	0.326	0.326	0.004	2.487
SIZE FI	16.303	2.219	10.912	21.29
DIV	0.787	0.407	0	1
ROA	0.066	0.094	-0.280	0.7293
AV	14.192	2.897	2.423	19.57
S/AV	0.667	1.374	-0.106	11.818

The average size of the board is 7,615. It consists of a maximum of 12 directors and a minimum of 4 directors. The analysis of the nature of its members shows that external directors represent an average of 0.0798951. The number of directors varies from 0 to 0.9. The high level of external directors is recorded among listed companies. In addition, an average of 68.25 of the Tunisian companies is headed by CEO.

The analysis of the ownership structure gives the following results. First, Tunisian companies are strongly dominated by the presence of a majority shareholder. This shareholder holding on average 51.6% of the company shares. This shareholder disposes of 89.88% of the shares of the companies. These values show that Tunisian companies are family businesses. Second, the average ownership of institutional shareholders is 11.83%. This value ranges from 0 to 59.41% with a standard deviation of 11.40%. The maximum value is documented among listed companies. The presence of the institutional investor can be explained by their experiences and expertise. Third, the managerial ownership varies from 0 to 75.5% with an average of 14.84% and a standard deviation of 16.64%. These values show that the manager carries out all the functions within her company.

The average size of Tunisian companies is 16.30%. The minimum size is 10.912 and the maximum size is 21.29, with a standard deviation of 2.219. Second, the average debt of Tunisian companies is 32.62. On average, 0.787 Tunisian companies pay dividends.

The value of the company is measured by (ROA, AV, S/A C/AV, Emp/AV, D/AV). On average, economic profitability (ROA) is 0.066. This profitability varies between -0.280 and 0.7298 S/VA has an average of 1.374. Its minimum value is -0.106. Its maximum value is 11.81.

C/ AV has a minimum value of -0.041. Its maximum value is 5.945. Its average is 1.811. Emp / AV has an average of 0.994. Its minimum value is -2.3747. Its maximum value is 4.92. D/VA represents an average value of 0.5138. Its maximum value is 9.456.

#### *B. Correlation Matrix*

Table 3 presents the correlation matrix between dependent and independent variables. The results indicate that most correlations of variables are small, implying that multicollinearity does not pose a serious problem in this study.

Table 3 Correlation Matrix

	Cash1	Cash2	CCC	SIZE	DUAL	INDEP	CONS OWN	INSD	INS OWNE	DIV	DET	SIZE FI	ROA	Emp/AV	C/AV	S/AV	D /AV	AV	
Cash1	1																		
Cash2	0.2066	1																	
CCC	0.0922	0.2359	1																
SIZE	-0.1465	0.0947	0.0390	1															
DUAL	0.0552	0.0315	-0.0953	0.0428	1														
INDEP	-0.1018	-0.0571	-0.1135	0.1234	-0.1437	1													
CONSOWN	0.0442	0.0092	0.0315	-0.1199	-0.0149	-0.2328	1												
INSD	0.0951	0.1266	0.0213	-0.3205	-0.0489	-0.0851	0.1499	1											
INS OWNE	0.0846	0.0107	0.1774	-0.0039	-0.0953	0.0751	-0.1001	0.0054	1										
DIV	0.0977	0.1775	0.0839	-0.1688	0.0772	-0.1144	0.1784	0.3033	0.1610	1									
DET	-0.1317	-0.2767	-0.0631	0.1432	0.0891	0.0207	-0.1156	0.2517	0.0702	-0.3841	1								
SIZE FI	-0.1673	-0.1874	-0.1616	0.2419	0.0587	0.2832	-0.2730	0.3331	-0.2342	-0.3503	0.3196	1							
ROA	0.1694	0.0914	0.1096	-0.0019	-0.0561	-0.0021	0.0284	0.1968	0.1114	0.4102	-0.3696	-0.2887	1						
Emp/AV	0.0995	0.1687	0.1413	-0.2484	-0.0130	-0.2477	0.1769	0.1994	0.1363	0.1716	-0.1754	0.5592	0.0849	1					
C/AV	0.1047	0.1517	0.2440	-0.2774	-0.0794	-0.2335	0.1970	0.2334	0.2579	0.2966	-0.2454	0.6249	0.2204	0.1389	1				
S/AV	0.1091	0.0946	0.1137	-0.1926	-0.0792	-0.1732	0.1389	0.1098	0.2599	0.2406	-0.2137	0.4666	0.2476	0.4591	0.5419	1			
D /AV	0.0622	0.0816	0.1550	-0.2138	0.0125	-0.1817	0.1611	0.1861	0.2188	0.3139	-0.2358	0.4927	0.2463	0.5239	0.5703	0.4156	1		
AV	-0.2938	-0.2386	-0.0099	0.2386	0.0884	0.2536	-0.2229	-0.3280	-0.2668	-0.3692	0.3205	0.8417	-0.2387	-0.5921	-0.6853	-0.5109	-0.5260	1	

number of shares held by the majority shareholder to the total number of shares. INSD is ownership of a manager is the ratio of the number of shares held by the manager to the total number of shares. INSOWN is the ratio of the number of shares held by institutional investors to total

Notes: This table reports Pearson correlation coefficients between research variables. **Cash1** is Log of (Total Liquidity and Liquidity Equivalent / Net Assets) Ratios. **Cash2** is Current liquidity ratios (short-term assets / short-term liabilities). **CCC** is Cash Conversion Cycle. It is measured by adding the average collection period and the inventory turnover in days and deducting the average payment period. **Size** is the size of the Board of Directors. It is measured by the number of directors who sit on the board of directors. **DUAL** is dummy variable equal to 1 when the board chairman and CEO positions are held by one individual and 0 otherwise. **INDEP** is the proportion of independent external directors serving on the board. **CONSOWN** is equal to the ratio of the

number of shares of the firm. **DET** is the ratio between the book value of long-term and short-term debt to the book value of total assets.

***SIZE FI** is the natural logarithm of total assets. **DIV** is a variable that takes the value of 1 when the company distributes a dividend and 0 if no. **ROA** is the return on assets. It is the *ratio* of net income and total assets. **AV** is Added Value measured as the difference between Turnover and Intermediate Consumption. **S/AV** is the creation of value for the state the proportion of value added devoted to the payment of taxes, Assimilated payments, Income tax. **C/AV** is the Creation of value for lenders Proportion of the added value devoted to the payment of interest and similar expenses. **Emp/AV** is the creation of value for employees. It is the proportion of the added value absorbed by personnel costs and the participation of employees in the fruits of added value expansion. **D/AV** is the Value creation for shareholders the percentage of added value paid to shareholders (dividend).*



C. Regression analysis

Table 4  
 Estimation results for model 1

Independent Variables	Cash1 Model1a	Cash2 Model1b	CCC Model1c
SIZE	-0.028 (0.127)	0.020 (0.404)	0.004 (0.876)
DUAL	-0.085 (0.278)	0.239 ** (0.012)	-0.731 *** (0.000)
INDEP	-0.399 (0.142)	-0.386 (0.294)	-0.452 (0.253)
CONSOWN	-0.006 (0.982)	-0.689 *** (0.003)	-0.661 ** (0.048)
INSD	0.056 (0.855)	0.332 (0.233)	-0.476 (0.185)
INS OWNE	1.629 *** (0.000)	0.940 ** (0.029)	1.460 ** (0.006)
DET	0.087 (0.608)	-1.898 *** (0.000)	0.606 *** (0.000)
DIV	0.140 (0.130)	0.322 *** (0.000)	0.535 *** (0.001)
SIZE FI	-0.163 *** (0.000)	-0.057 * (0.078)	0.084 *** (0.005)
Cons	-0.574 (0.199)	3.314 *** (0.000)	3.073 *** (0.000)
R <sup>2</sup>	0.1147	0.0948	0.0948

Notes: This table reports panel regression with the **Cash1** is Log of (Total Liquidity and Liquidity Equivalent / Net Assets), **Cash 2** is Current liquidity ratios (short-term assets / short-term liabilities) and **CCC** is measured by adding the average collection period and the inventory turnover in days and deducting the average payment period, as the dependent variable. **SIZE** is the size of the Board of Directors. **DUAL** is dummy variable equal to 1 when the board chairman and CEO positions are held by one individual and 0 otherwise. **INDEP** is the proportion of independent external directors serving on the board. **CONSOWN** is equal to the ratio of the number of shares held by the majority shareholder to the total number of shares. **INSD** is ownership of manager is the ratio of the number of shares held by manager to the total number of shares. **INSOWNE** is the share of capital held by institutional investors is the ratio between the numbers of shares they held by institutional investor to the total number of shares of the firm. **DET** is the ratio between the book value of long-term and short-term debt to the book value of total assets. **DIV** is a variable that takes the value of 1 when the company distributes a dividend and 0 if no. **SIZE FI** is Company size is the natural logarithm of Size of total assets. \*, \*\*, \*\*\*denote significantly different from zero at the 0.10, 0.05 and 0.01 levels, respectively. Values in parenthesis are the estimated p-values.

Table 4 provides the results of regression of panel data, based on to test research hypotheses (H1 to H6). The Empirical results indicate that the taken variables SIZE, DUAL, INDEP, CONSOWN, INSD, INS OWNE, DET, DIV and SIZE FI do not collectively explain the cash.

The hypothesis of the relationship between cash and board size H1 was unsupported. The coefficients of size are positive and no significant for the model 1b and model1c. Also, the coefficient of size is negative (-0.028) and non significant (0.127) for the model1a. The result suggests that the size of the board has no influence on the cash.

According to Table 4, the coefficient of Dual is not significant, and thus inconsistent with our anticipation in H2 for models 1. This relationship shows that Dual has no influence on decisions regarding cash. The coefficient of Dual is positive (0.239) and significant (at the 0.05 level), and thus inconsistent with our anticipation in H2 for models 1b. The coefficient of Dual is negative (-0.731) and significant (at the 0.01 level), and therefore consistent with our anticipation in H2 for models 1c.

As illustrated in Table 4, the proportion of independent directors INDEP is negative and not significantly associated with cash, thus rebutting H3. This suggests that a firm with a higher proportion of independent directors has lower levels of cash. Therefore, an independent board plays an important role in mitigating information asymmetry between the issuer and potential new investors, and affects positively the performance of the firm.

According to Table 4, concentration ownership has a negative coefficient in 1c model. However, these coefficients are significant in model 1b and model 1c. The hypothesis of the relationship between cash and concentration ownership H4 was supported. This result is consistent with the findings of [33]-[35] who show that large shareholder reduces cash. Indeed, these investors are strategic investors. They are interested in the long-term prospects of the company. In addition, these investors could have cheaper access to financial markets, which would minimize the need for cash.

According to Table 4, the coefficients of inside ownership are not significant, and thus inconsistent with our anticipation in H5 in 3 models. The share of capital held by the manager has no influence on the cash of Tunisian companies. However, this result is inconsistent with the finding of [37] - [39] who report negative and significant relationship between ownership and cash. This relationship is explained by an alignment effect between manager and shareholders.

The hypothesis of the relationship between cash and institutional ownership H6 was supported. The coefficient of INSOWNE is positive and significant in three models, suggesting that firms with important institutional investor hold an important level of cash. This relationship shows that, when the bank holds share of the firm encourage it to hold cash. Further, banks in this case do not worry about how managers would use these funds because, by becoming shareholders and creditors at the same time, the banks are involved in the management of the firm even if their share of capital is minimal. The control exercised by the banks is intensifying, which reduces the discretionary margin of a manager who, ultimately, becomes unable of exploiting the resources of the firm for his own interest. In short, banks encourage the holding of cash to repay the debt.

Regarding the control variables, Table 4 shows that there is no significant relationship between debt and cash in model 1. It follows them that there is a negative and significant relationship between cash2 and debt. This relationship shows that the most indebted companies can easily have a credit to reduce their cash. This relationship was proved by [57]-[71]. Finally, the relationship between cash conversion cycle and debt is positive (0.606) and significant at 0.01 level. This relationship can be explained by the long period of fundraising. In other words, companies that find it difficult to raise funds, find themselves obliged to contact the banks asking for cash facility to finance their activities.

The three measures of cash and dividend have positive, but only significant coefficients with cash2 and CCC. Indeed, Miller and Rock (1985) [72] showed that the dividend

informs the market about the company's future cash flows. The cut of the distribution will be perceived by the market as a bad signal. The positive relationship between cash and dividend was proved by [21].

According to Table 4, the coefficient of SIZE FI is negative and significant for model 1a and model 1 b. This relationship shows that those large companies hold less cash. Large firms benefit from the economies of scale that reduces their external financing costs and their need for cash holdings. In addition, large companies generally have lines of credit open to banks and have easy access to the capital market. This result is consistent with the findings of [52]- ([54].

However, the coefficient of SIZE FI is positive and significant for model 1c. This relationship shows that big companies hold more cash. Indeed, large companies prove to be mature as their activities generate significant cash flow, which makes the level of cash significant.

Estimation results for model2

	Shareholders	partnership value				
	Value					
	ROA	AV	Emp/AV	C/AV	S /AV	D/AV
	Model 2 a	Model 2 b	Model 2 c	Model 2 d	Model 2 e	Model 2 f
Cash1	0.0062*** (0.000)	-0.037** (0.016)	0.0038 (0.667)	0.00005 (0.993)	0.0168** (0.013)	0.00058 (0.912)
SIZE	0.0041*** (0.000)	0.030* (0.063)	-0.0541*** (0.000)	-0.0690*** (0.000)	-0.0258*** (0.001)	-0.0179*** (0.001)
DUAL	-0.0021 (0.566)	0.163** (0.012)	-0.0498 (0.155)	-0.2758*** (0.000)	-0.0646* (0.064)	0.03696* (0.094)
INDEP	0.0395** (0.021)	0.691** (0.015)	-0.5481*** (0.000)	-0.7332*** (0.000)	0.1848 (0.174)	-0.0354 (0.661)
CONSOWN	-0.014 (0.223)	0.325** (0.097)	0.0600 (0.487)	0.3599** (0.026)	0.0644 (0.402)	0.1105* (0.057)
INSD	0.0345*** (0.000)	-0.533** (0.017)	-0.0643 (0.646)	-0.169 (0.507)	-0.3154*** (0.003)	-0.0753* (0.070)
INS OWNE	0.0450** (0.022)	-1.089*** (0.000)	0.0996 (0.412)	2.077*** (0.000)	0.8733*** (0.000)	0.7400*** (0.000)
DIV	0.0480*** (0.000)	-0.287*** (0.001)	-0.0638 (0.146)	0.1626*** (0.008)	0.0945*** (0.000)	0.2121*** (0.000)
DET	-0.0589*** (0.000)	0.444*** (0.000)	0.0783* (0.091)	-0.314*** (0.000)	-0.2250*** (0.000)	-0.1390*** (0.000)
SIZE FI	-0.0055*** (0.000)	1.108*** (0.000)	-0.1628*** (0.000)	-0.442*** (0.000)	-0.1113*** (0.000)	-0.1005*** (0.000)
Const	0.1235*** (0.000)	-4.292 (0.000)	3.979*** (0.000)	8.8702*** (0.000)	2.4088*** (0.000)	1.905*** (0.000)
R <sup>2</sup>	0.1123	0.4022	0.3360	0.0042	0.2601	0.2878

Notes: This table reports panel regression with the **ROA** is the return on assets, is the ratio of net income and total assets. **AV** is Added Value measured as the difference between Turnover and Intermediate Consumption. **Emp/AV** is the creation of value for employees. It is the proportion of added value absorbed by personnel costs and the participation of employees in the fruits of the added value expansion. **C/AV** is the Creation of value for lenders. It is the proportion of the added value devoted to the payment of interest and similar expenses. **S /AV** is the creation of value for the state. It is the proportion of value added devoted to the payment of taxes, Assimilated payments, Income tax. **D/AV** is the value creation for shareholders. It is the percentage of added value paid to shareholders (dividend). **ROA, AV, Emp/AV, C/AV, S /AV and D/AV** are the dependent variables. **Cash1** is Log of (Total Liquidity and Liquidity Equivalent / Net Assets). Or net assets are total assets minus cash and cash equivalents. **SIZE** is the size of the Board of Directors.

**DUAL** is dummy variable equal to 1 when the board chairman and CEO positions are held by one individual and 0 otherwise. **INDEP** is the proportion of independent external directors serving on the board. **CONSOWN** is equal to the ratio of the number of shares held by the majority shareholder to the total number of shares. **INSD** is ownership of a manager is the ratio of the number of shares held by the manager to the total number of shares. **INS OWNE** is the share of capital held by institutional investors is the ratio between the number of shares they hold by institutional investor to the total number of shares of the firm. **DET** is the ratio between the book value of long-term and short-term debt to the book value of total assets. **DIV** is a variable that takes the value of 1 when the company distributes a dividend and 0 if no. **SIZE FI** is Company size is the natural logarithm of Size of total assets. \*, \*\*, \*\*\*denote significantly different from zero at the 0.10, 0.05 and 0.01 levels, respectively. Values in parenthesis are the estimated p-values.

From Table 5, we notice that there is a pronounced, statistically significant and positive relationship between the return on asset and cash. These findings are consistent with our expectation that the best performing companies have a large cash position. Otherwise, cash helps companies undertake creative projects even in the absence of external funds. In the case, Mikkelson and Partch (2003) [73] show that cash reserves can play a positive role in mitigating financing frictions and increasing firm value. However, the relation between partnership value and cash has a negative and significant coefficient. This relationship shows that cash holdings reduce the added value created for all partners. Put differently, the holding of cash raises the conflicts between different partners.

As far as wealth distribution is concerned, the relationship between cash and the four measures of wealth distribution is positive, but only significant for the wealth absorbed by the state. This relationship shows that cash is a source of wealth for the state.

The value of the company, measured by the shareholder value (ROA) and the partnership value (AV), has a positive and significant relationship with size of the board. This relationship shows that the size of the board of directors promotes firm value for shareholders and various partners of the company. In addition, a large board has the power to control and to refuse, if necessary, the decisions made by the officer. This result is consistent with the one found by [74], in the context of the Australian firms. Table 5 shows that there is a negative and significant relationship between the size of board of director and four measures of wealth distribution. This relationship shows that an important size of the board has a negative influence on wealth among the various partners of the company.

According to Table 5, the coefficient of Dual is negative and no significant with return on asset. This relationship shows that CEO duality has no influence on the decisions revolving around shareholder value. The coefficient of Dual is positive and significant with added value. This result, which is in agreement with the supporters of the stewardship theory, such as ([19], Cannella and al., (1993) and Sridharan and al., (1997), ([20], predicts that the combination of functions increases the financial performance of the firm because, in that case, the CEO would have all the information to be disclosed to the members of the board of directors. The advocates of duality require the presence of a single official who is responsible for sketching out the company's strategies and policies because the separation of functions creates a framework of divergence within the board and promotes conflicts of interest.

Table 5 shows those three types of relationship between duality and four measures of wealth distribution. First, there is a negative and a non-significant relationship between duality and the value received by the employees. Second, there is a negative and significant relationship between duality and value received by the state and creditor. Finally,

there is a positive and significant relationship between duality and value received by the shareholders.

The firm value, which is measured by the shareholder value, as well as the partnership value, has a positive and significant relationship with independent directors. This relationship shows that the presence of external directors promotes performance and protects shareholder value as already shown by and various partners [75] - ([76].

Table 5 shows the existence of three types of relationships between board independence and wealth distribution. First, there is a negative and significant relationship between independence and the value received by the employees and creditors. Second, there is a positive and non-significant relationship between independence and the value absorbed by the state. Finally, there is a negative and a non-significant relationship between independence and the value received by the shareholder.

According to Table 5, concentration ownership has a negative and non-significant coefficient with shareholder value. This relationship has proven by [77] who examined the impact of capital concentration on the financial performance of a sample of 64 Tunisian firms. He concluded that the concentration of capital has a non-significant impact on performance. Similarly, Madani and Khlife (2010) [78], concluded that the concentration of capital has a non-significant impact on performance. However, the relationship between partnership value and capital concentration has a positive and significant coefficient. This relationship shows that the concentration of ownership improves the overall performance of the company. Table 5 shows that the relationship between concentration ownership and the four measures of wealth distribution is positive, but only significant for the wealth absorbed by the shareholder and the creditor. This relationship shows that the concentration of property favors wealth creates for shareholders and creditors. It also reduces the conflicts of interest between them.

From Table 5, we notice that there is a pronounced statistically significant and positive relationship between the return on asset and manager ownership. This relationship shows that the shares held by managers reduces the divergence of interests between shareholders and managers [11]. Indeed, when the interests of the managers are compatible with those of the shareholders, the conflicts and therefore the agency problems will be reduced. Therefore, managerial ownership can reduce managers' tendency to take advantage of their position, expropriate the wealth of shareholders and engage in decisions that do not maximize the firm value. We notice that there is a pronounced a negative and significant relationship between added value and manager ownership. This relationship shows that an important property of manager can harm the wealth of different partners. Table 5 shows that the relationship between managerial ownership and the four measures of wealth distribution is negative, but the only significance of the wealth absorbed by the shareholder and the State. This

relationship shows that manager ownership influences negatively wealth creates for shareholders and State.

According to Table 5, institutional investor has a positive and significant coefficient with shareholder value. A positive and significant relationship shows that institutional investors are involved in the control and management of companies. These investors can influence organizational methods by making companies benefit from their expertise in various fields. This could improve performance. This relationship has been proven by ([42]-[43]). However, we notice that there is a pronounced a negative and significant relationship between added value and institutional investor. This relationship shows that the existence of profitable business relationships and investment relationships places institutional shareholders in a conflicting situation that is generally associated with a reduction in rigorous control and a decrease in value ([37]-[44]).

Table 5 shows that the relationship between institutional investor's ownership and the four measures of wealth distribution is positive, but only non-significant for the wealth absorbed by employees. This relationship shows that institutional investor influences positively the wealth creates for shareholders, creditors and the State.

The relationship between debt and shareholder value has a negative and significant coefficient. The negative relationship shows that debt is a barrier to the creation of value through the costs it creates. This result is in agreement with the results of the [79] stating that debt generates high agency costs between shareholders and creditors, which will have a negative impact on firm value. However, the relationship between debt and partnership value has a positive and significant coefficient. This relationship shows that the debt boosts the manager's effective management and to keep Their obligations with regard to lenders, shareholders, employees and the state. Albouy (1999) [80] explained that debt increases the risk of job loss and is beneficial for managers who can enhance performance.

Table 5 shows the existence two types of relationship between debt and wealth distribution. First, there is a positive and significant relationship between debt and the value absorbed by the employees. Second, there is a negative and significant relationship between debt and the value absorbed by the state and creditors.

Regarding the control variables, Table 5 shows that there is a positive and significant relationship between dividend and shareholder. This relationship shows that the most indebted companies can easily have a credit to reduce their cash. The payment of dividends reflects the economic and financial situation of the company. In addition, the company paying the dividends will be more favorably perceived by the market. This result confirms the predictions of the signaling theory advanced by [72] according to which the dividend payment can be positively correlated with the measure of profitability. The best performing Tunisian companies adopt a generous dividend policy. This result corroborates the result proved by [81]-[82]. The relationship between the dividend and the

partnership value is negative and significant. This relationship shows that the dividend distribution reduces the value of the company for the different partners.

Table 5 shows that the relationship between dividend and the three measures of wealth distribution is positive and significant, but only negative and non-significant for the wealth absorbed by employees. This relationship shows that dividend influences positively wealth creates for shareholders, creditors and the State.

The relationship between the size of the firm and the shareholder value has a negative and significant coefficient. This coefficient shows that the relationship between firm size and firm value is disproportionate. The negative relationship shows that the size of the firm presents a barrier to the creation of value through the costs it creates. However, the relationship between the size of the firm and the partnership value has a positive and significant coefficient. This relationship shows that a large size of the company increases the profitability of the company. Table 5 shows that the relationship between the size of the firm and the wealth distribution is negative and significant for four measures. This relationship shows that large firms have low profitability. This relationship can be explained by the complexity and plurality of contractual relationships.

## V. INTRODUCTION

Researchers proposed different theories to explain cash holding based on Pecking Order Theory, Free-Cash Flow theory, Agency Theory and Signaling Theory. This study investigates the impact of board structure and corporate ownership of cash holding by using a sample of 80 Tunisian firms over the period between 2010–2014. We find that the relationship between the size of the board of directors and cash is non-significant, the relationship between cash and duality depending on cash measure used and the relationship between three cash measures and the presence of external directors has a negative and non-significant coefficient. The influence of the majority shareholder is negative with the three cash measures, but only significant with Cash2 and CCC. Managerial ownership has no influence on cash. The relationship between cash and institutional ownership is positive and significant in three models, suggesting that firms with important institutional investor hold an important level of cash. The influence of cash on firm value shows the following results. First, cash has a positive and significant influence on the shareholder value. Second, cash has a negative and significant influence on the partnership value. Finally, cash flow has a positive influence on the four measures of value allocation, but is only significant with the value perceived by the State. However, despite the significant contribution to cash holding and governance research, this study neglects the behavioral approaches that might help explain how corporate governance influences the behavior of investors and managers in cash holding.

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