

The impact of managerial risk culture on the capital structure and the investment decision of corporations in Egypt

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Abstract

This study provides an empirical evidence about the impact of managerial risk culture on two main financing issues, 'the capital structure and the corporate investment' in corporations in Egypt controlling for a set of firm-level characteristics variables. Individualism and Fatalism have a positive and significant relationship with long-term debt otherwise, individualism has a positive relationship with long-term investment and has a negative relationship with short-term investment while fatalism has a negative relationship with long-term investment. Whereas hierarchical and egalitarian have a negative relationship with long-term debt, however hierarchical has a negative relationship with long-term investment and it has a positive relationship with short-term investment while egalitarian has a positive relationship with long-term investment and a negative relationship with short-term investment. We conclude that risk culture matters and plays a critical role as a determinant of capital structure and investment decision.

Keywords: Individualism, Hierarchical, Egalitarianism, Fatalism; Capital structure; Corporate investments; Egypt

I. Introduction

In the field of corporate finance, huge number of literature tried to explain and investigate the determinants of investment choices and corporate capital structure on the micro and macro level, trying to solve the dilemma regarding both decisions.

Risk culture has become an important topic over the last few years since the global financial crisis of 2008, which has been in forefront of adopting risk culture and highlighted a range of micro level cultural weaknesses within specific financial organizations (Ashby 2011). Recent history reveals that risk culture had a vital role to play in causing financial crisis and financial organization failures also it is a powerful information as a key indicator of effective risk management that has historically not been measured (Power et. al. 2012). Risk culture may be an important determinant “missing piece” to the capital structure puzzle and investment decisions.

In this paper, we are looking to add to the literature by investigating the critical role of risk culture in explaining the corporate capital structure and the corporate investment decision. The choice of the Egyptian's listed companies offers a further contrast with existing researches and trying to contribute a useful approach for exploring managerial risk culture.

The remainder of our paper is structured as follows; in section II, we review the literature and formulate our hypotheses; In section III, we present our data, illustrate our methodology and introduce our tests; Section IV reports the empirical study section V includes our findings and section VI trace the main conclusions of the study.

II. Prior studies and developing hypotheses

True to say that it is difficult to approach new fields of research, managerial risk culture is still infancy and ambivalence. Unfortunately, there is no sufficient research studies have investigated the impact of managerial risk culture on capital structure and investment

decisions. even we noticed the lack of explicit academic research on the topic of risk culture itself (Bozeman and Kingsley, 1998; Simons, 1999; Power, 2007; Ashby et al 2013 are the notable exceptions). With regard to the organizational practice of risk culture, not many organizations worldwide are aware of risk culture, however. Risk culture or risk-taking behavior were poorly understood both by companies and regulators (Walker, 2009; House of Commons Treasury Committee, 2009).

Holding the above-mentioned limitations, we review the literature focusing on culture influences and used it as a cornerstone to find out our way to explore the influences of risk culture.

Most of culture literature chooses Hofstede's dimensions (2001) as a measure of national culture. Dutch sociologist Geert Hofstede (2001) developed a number of measures of culture, including power distance, individuality, masculinity, uncertainty avoidance, and short and long-term orientation. He employed these measures in investigating cultural relativism, which explores cultural differences between societies, and their consequences (Hofstede & Hofstede, 2005: p.6, p. 434). However, Jones (2007) points out those other researchers have found that Hofstede's study was indeed relevant, rigorous and was replicated in different circumstances. But Hofstede's study applies to cross-cultural differences in the sense of differing countries and ethnicities, not to differences between sub-groups within a culture, such as might occur when considering one function of an organization with another.

At the micro level, culture has been shown to affect individual's risk-taking behaviors. Tse et al. (1988) show that home culture has predictable, significant effects on the decision-making of executives. Hunt (2003), described the culture influences on the individual decisions of managers and how the collective attitudes make up the culture. Individual and Culture influence each other in a dual direction relationship. Breuer et al. (2011) find that individualism is associated with overconfidence and over-optimism and has a positive significant effect on individual financial risk-taking and the decision to own stocks. Graham et al. (2010), used survey data in the USA, also show that CEOs are not immune to the effects of culture. They find that CEOs' decision-making is strongly influenced by cultural values such as uncertainty aversion. At the macro level, cultural heritage has been linked to corporate governance, investor protection, creditor rights, bankruptcy protection, judicial efficiency, accounting transparency, and corruption. Doidge et al. (2007) find that cross-cultural differences explain the variance in corporate governance more than observable firm characteristics. Hope (2003) shows evidence that both legal origin and culture (as proxied by Hofstede's cultural dimensions) are important in explaining firms' disclosure practices and investor protection. Licht et al. (2005) illustrate that social norms of governance correlate strongly and systematically with high individualism and low power distance. Beraho and Elisu (2010) show that cross-cultural variables have a direct influence on the propensity to file for bankruptcy and on insolvency laws. Getz and Volkema (2001) and Robertson and Watson (2004) link cultural differences to corruption levels.

There is a small strand of literature which has explored corporate risk-taking and the influence of culture on capital structure and the investment decision. For example, Laeven and Levine (2009) show that risk-taking by banks varies positively with the comparative power of shareholders within each bank. Moreover, they show that the relations between bank risk-taking and capital regulation, deposit insurance mechanisms, and bank activities restrictiveness depend critically on the bank's ownership structure. Claessens et al. (2000) show that corporations in common law countries and market-based financial systems have

less risky financing patterns and that the stronger protection of equity and creditor rights is also associated with less financial risk. Overall, while the literature is relatively small, national culture has been indirectly linked with corporate risk-taking decisions in formal studies, although most of them only analyze the banking sector. Kanagaretnam et al. (2011) show that banks in high-uncertainty avoidance societies tend to take less risk, whereas banks in high individualism societies take more risk. However, they do not control for institutional variables such as corporate governance, bankruptcy protection, judicial efficiency, transparency, and corruption, which have shown to be affected by national cultural norms and which could, in their turn, affect corporate risk-taking. Griffin et al. (2012) study the impact of culture on firms in the manufacturing sector in the period 1997–2006. they used a hierarchical linear mixed model to analyze the impact of culture on corporate risk-taking. They show that individualism has positive and significant direct effects, while uncertainty avoidance has negative and significant direct effects on corporate risk-taking. Mihet R., (2012) explore the impact of cultural influences on corporate risk-taking used three indicators to measure risk taking z-score, standard deviation of ROA and R&D expenditures and find that risk-taking is higher for domestic firms in countries with low uncertainty aversion, low tolerance for hierarchical relationships and high individualism, domestic firms in such countries tend to take substantially more risk in industries which are more informationally opaque these results hold after controlling for legal constraints, insurance safety nets, and economic development.

Lucey et al., (2013) provide an empirical analysis of how culture influences capital structure in small and medium-sized enterprises (SMEs) find that uncertainty and individuality are negatively related to long-term debt, highlighting SME owners desire to avoid heightened business risk, reduce interference from debt providers, and maintain autonomy and independence. Negative relationships between power distance and debt suggest a more consultative role with financial institutions, facilitating greater access to debt, policy makers should take account of the powerful consequences of cultural influences when designing and implementing financing initiatives.

Shao L., et al., (2013) show that firms in individualistic countries invest more in long-term (risky investment) than in short-term (safe) assets. Moreover, the effect of individualism on long-term investment hinges on R&D: firms in individualistic countries invest more in R&D projects but not more in physical assets. Individualistic firms tend to employ excess cash to increase R&D rather than increase dividends, and R&D decisions are less reliant on internal financing but more responsive to growth opportunities in individualistic countries.

Although the previous literature not directly linked to risk culture but it highlights the approach to investigate risk culture and its influence on capital structure and investment decisions

Developing hypotheses

II.1 Individualism (IDV)

Individualism has been consistently linked in the psychological literature with overconfidence and over-optimism. In more individualistic societies, decisions are the product of an individual rather than the group/ and these decisions are more likely to be driven by overconfident individuals tend to be more risk tolerant than less overconfident people, exaggerating their ability to control outcomes and overestimating their knowledge. When individuals are too confident in their abilities, they tend to overestimate the accuracy of their predictions and to be excessively secure in their estimates of parameters, such as the

future return of a stock (Van den Steen 2004; Grinblatt and Keloharju 2009). Also Managers with growth and/or risk perception biases (optimistic and /or overconfident managers) tend to choose higher debt levels and issue new debt more often compared to otherwise identical unbiased managers but need not follow a pecking order (Hackbarth 2008), on the contrary, optimistic and overconfident managers may predict a pecking order of financing decisions (Baker et al., 2004), also, Heaton (2002) theoretically showed that managerial optimism is also able to lead to managers' pecking order preference, the rationale for pecking order preferences depends on the extent of the undervaluation from the managers' perspective. Optimistic managers prefer to rely on internal funding rather than issue a risky security to finance their needs. When these internal funds are not forthcoming, they choose debt financing first over equity.

Gleason et al., (2000) argue from Hirshleifer and Thakor (1992) that cultures with high individuality tend to be associated with managers looking after their own interests and enhancing their reputation. Therefore, they are likely to choose lower debt in order to maximize success.

Individualists perceive risk as an opportunity, therefore they will accept risky investments, also individualistic managers are free to make risky decisions using their own judgment (Kreiser et al. (2010), and are motivated to stand out from other managers to demonstrate their autonomy. This leads to their use of decision rules that overweight risky payoffs, relative to less individualistic managers. In addition, individualistic managers, because of their self-enhancing belief that they are more skilled and have a higher level of outcome control than other managers (Sedikides et al., (2003) and Yamaguchi et al. (2005), underestimate the level of uncertainty in risky decisions. This leads to their use of decision rules that require a lower risk premium (i.e., a lower discount rate) for risky projects, relative to less individualistic managers. Due to the influences of both managerial autonomy and self-enhancement, on the other hand, individualism is positively related to corporate risk-taking.

Also many Recent studies on national culture and corporate finance document that firms in individualistic countries have more volatile operating income (Li, Griffin, Yue, & Zhao, 2012), higher leverage (Chui, Lloyd, & Kwok, 2002), lower dividend payments (Shao, Kwok, & Guedhami, 2010), and more earnings management (Han, Kang, Salter, & Yoo, 2010).

Individualistic cultures see risks as possibilities. Risk taking is needed and those who are willing to take risks will be successful over time.

We predict that individualism will have a significant positive effect on the capital structure and therefore choose higher debt levels. we argue that if we are digging deeply from where managers get their confident and over-optimism, may be from their history of success or may be the level of knowledge they have or we can say from their experience with risk, could be from the theory they believe in it and prefer to use. In addition, many studies linked the determinants of capital structure and theories. Thus, the first hypothesis and sub-hypotheses are

H1 There is a positive relationship between individualism and long-term debt

H1.1 There is a positive relationship between individualism and short-term debt

- H1.2 There is a positive relationship between individualism and risky investment
- H1.3 There is a positive relationship between individualism and short-term investment
- H1.4 There is a strong relationship between individualism and pecking order theory

II.2 Hierarchical (HIER)

Individual with hierarchic orientations are assumed to accept risks as long as decisions about those risks are justified by governmental authorities or experts. They fear risks that threaten the social order, hierarchies will focus on establishing risk systems that define risk appetite and clear risk-reward relationship (IRM 2012)

Hierarchist cultures assume that future can be predicted and managed at least within certain limits. Risks should be actively managed and excessive risk taking should be avoided. Hierarchists see the persons in power often withhold information about things which are harmful to us, they plan carefully and the financial risks are not taken (Rippl,2002)

We suggest that managers have Hierarchical orientation will take less risk, therefore choose lower debt and looking to invest less and avoid risky projects, thus they may follow trade-off theory to determine their capital structure thus, the second hypothesis and sub-hypotheses are

- H2 There is a negative relationship between hierarchical orientation and long-term debt
- H2.1 There is a positive relationship between hierarchical orientation and short-term debt
- H2.2 There is a negative relationship between hierarchical orientation and risky investment
- H2.3 There is a positive relationship between hierarchical orientation and short-term investment
- H2.4 There is a strong relationship between hierarchical orientation and pecking order theory

II.3 Egalitarianism (EGL)

Many studies show that other laws, norms, and practices pertaining to firms' operations and finance tend to be consistent with the general level of cultural egalitarianism. For instance, egalitarianism is associated with regulatory restrictions on incentive pay meant to protect industrial workers (Siegel and Larson, 2009).

Siegel et al., (2010) identify how country differences on a key cultural dimension – egalitarianism- influence international investment flows, they found a robust influence of egalitarianism distance on cross-national flows of bond and equity issuances, syndicated loans, and mergers and acquisitions, egalitarianism exercises its effect on international investment via an associated set of consistent contemporary policy choices.

Egalitarians are assumed to oppose risks that will inflict irreversible dangers on many people or on future generations. They distrust risks that are forced on them by the decisions of a small elite of experts or governmental authorities. The egalitarian manager believe that the decisions not decided by experts but by people, everyone in the corporation should share in the important decisions, they prefer to choose independent business (Rippl 2002).

Egalitarian cultures see that all risks threaten current delicate equilibrium. Thus risk is implicitly bad and all risks should be avoided as much as possible.

We suggest that managers have egalitarian orientation will take less risk, therefore choose lower debt to preserve the shareholder wealth and invest more, therefore may accept risky projects, thus they may follow zero debt theory to determine their capital structure thus, the third hypothesis and sub-hypotheses are

H3 There is a negative relationship between egalitarian orientation and long-term debt

H3.1 There is a negative relationship between egalitarian orientation and short-term debt

H3.2 There is a negative relationship between egalitarian orientation and risky investment

H3.3 There is a positive relationship between egalitarian orientation and short-term investment

H3.4 There is a strong relationship between egalitarian orientation and agency theory

II.4 Fatalism (FAT)

Fatalists have a strong orientation toward socially assigned classifications, but without a group identification, they do not trust anyone and don't try to know and to worry about things that they believe they can do nothing about like politics. See life like a lottery, they believe that the future is too uncertain to make serious plans, don't worry about politics and don't encourage financial investments. Fatalist cultures assume that future is unpredictable. Assessing and managing risks are essentially waste of time as one can't predict what the future will hold (Rippl 2002).

We suggest that managers have fatalism orientation will take more risk, therefore choose higher debt and invest in risky projects because they think life like a lottery thus, the fourth hypothesis and sub-hypotheses are

H4 There is a negative relationship between fatalism orientation and long-term debt

H4.1 There is a positive relationship between fatalism orientation and short-term debt

H4.2 There is a negative relationship between fatalism orientation and risky investment

H4.3 There is a negative relationship between fatalism orientation and short-term investment

H4.4 There is a strong relationship between fatalism orientation and trade-off theory

III. Data and methodology

Data for this study was sourced from many sources. The names of firms listed at EGX30' from the website of the Egyptian exchange market site (www.egyptse.com), and the data related to firms' income statement and balance sheet are obtained from the firms' annual reports, Mubasher Stock Market Software, and Gulf.argaam.com. Data with over 16 firms,

which cover 16 non-financial industries listed at EGX30 during the period from 2010 to 2015. the reason behind chose EGX30 because the firms listed amongst the top 30 companies in terms of liquidity and activity. The actively trading firms in Egypt stock market. Trading activity refers to the number of days the company's stock has been trading according to the monthly publications by the stock market authority in Egypt. Also, these firms have the highest market value. Additionally, there are reasons behind chose listed companies for the following reasons: the first one; because listed companies have to release and publish their financial information regularly; the data is more authentic and accurate, which is easier to understand. The second reason is; the sources of the capital of listed companies are the capital market, which is different to non-listed companies, so the study of listed companies would be more representatively. Most importantly is that we could get more information in detail comparing to non-listed companies; and the last reason is that the key value trade-offs in designing capital structure as laid out earlier are largely industry specific: growth, return, and asset specificity. If these characteristics are fairly similar across a peer group of companies, market forces will drive these companies toward an effective capital structure. By analyzing what capital structure most companies in the peer group have, we obtain at least some understanding of what a reasonable capital structure could be.

This study excludes corporations are no longer listed or companies about which there is not enough information on financial statements, the financial and banking corporations are excluded because their capital structure and their investments practices are different from the other companies due to the nature of their business.

III.1 The sample selected to answer the questionnaire was composed of individuals from the upper management across the 16 listed corporations in Egyptian stock exchange (EGX30). Also, the sample of managers in each corporation (Chief Financial Officer "CFO", Chief Risk Officer "CRO" and Chief Investment Officer "CIO") was surveyed. The questionnaires were sent out to 160 respondents (10 managers in each corporation). We have chosen financial managers because they are the actors inside corporations that lead and take critical and strategic decisions like capital structure and investment decisions. By virtue of their positions, those managers were expected to have a lot of information related to risk culture that could be used as the basis for any perspective diagnosis. This selection of respondents is the heads of the companies under the survey.

The strategy employed by using two questionnaires was unusual but was chosen for several reasons. First, it facilitated the testing of whether the context in which a question was placed influenced respondents' views about risk and explore the link between risk culture types and the manager's attitude and behaviors toward risk. Second, it enabled to link it to the findings with the results of the risk culture dimensions.

The first questionnaire is titled "Managerial Risk Culture questionnaire" adopted by Wouters and Maesschalck (2014).

The second questionnaire is titled "Managerial Risk attitudes and Risk behaviors" adopted by me to test the relations among perceptions of risk, risk behaviors and cultural biases.

Most of the questionnaires were distributed and collected personally by the researcher and by mail, the corporations covered by the questionnaire were **16** out of **21** corporations, the rest of corporations refused to participate.

Regarding the first questionnaire to measure managerial risk culture inside 16 corporations; The number of questionnaires filled out and returned to the researcher was 100. 10 of them were not fully completed and 90 out of 100 were usable. Thus, the response rate was 90 percent. This rate is high in comparison to postal surveys where response rates of less than 10 percent are common.

III.2 Key variables construction

Dependent and independent variables selected to test hypotheses developed in the previous section thus, this section describes and includes the following variables: Dependent variables, independent variables, and Control variables. All variables definitions, measures, and sources summarized in Table 1.

Variable	Definition	Sources
Panel A: Independent variables		
<i>Risk culture variables (Independent variables)</i>		
<i>IDV</i>	Individualism scores	the index Calculated from an average of the ratings items developed by Wouters & Maesschalck instrument (2014).
<i>HIER</i>	<i>Hieratical scores</i>	As above
<i>FAT</i>	Fatalism scores	As above
<i>EGL</i>	Egalitarianism scores	As above
<i>Dependent variables</i>		
<i>STD</i>	Short-term debt/total assets Short-term debt is defined as the debt repayable within one year including bank overdraft, loans, and other current liabilities	Calculated from firm's accounting data
<i>LTD</i>	Long-term debt/total assets <i>Long-term debt includes debt Payable beyond one year</i>	Calculated from firm's accounting data
<i>LTI</i>	Total long-term investment/Assets Capital Exp./Assets	Calculated
<i>STI</i>	Cash holding/Assets 100 times cash and short-term investment Scaled by total assets	Calculated
Panel B: Control variables		
<i>-Capital structure control variables</i>		
<i>SIZE</i>	Natural logarithm of total assets of the corporation	all firms accounting data
<i>PROF</i>	Ratio of EBIT to total assets	from firm's accounting Website
<i>FIXAS</i>	Asset structure is the ratio of fixed assets to total asset	
<i>LQ</i>	Liquidity is measured by ratio of current assets to Current liabilities	
<i>-Investments control variables</i>		
<i>SIZE</i>	Natural logarithm of total assets	
<i>Debt/Assets</i>	Total liabilities to total assets	
<i>Cash flow</i>	Cash flow from operation activities scaled by total assets	
<i>TWC</i>	Total working capital to total assets	

Table 1: Research variables, definitions and sources

III.3 The specifications of models

III.3.1 Models of capital structure

Based on the capital structure theories, and guided by previous empirical studies. From the consideration of the previous studies of the determinants of the capital structure all analysis performed using a linear mixed model, controlling for firm, industry level characteristics. Firms grouped within industries and analyzing the data through ordinary least squares (OLS), could lead to a multitude of problems such as obtaining correlated errors, biased estimates of coefficient standard errors, and wrongfully interpreting the results and significance of the predictor variables (Garson 2012). Accordingly, the researcher included the lagged value by using random-effects generalized linear regression (GLS) estimation with robust standard errors.

In addition, Ordinary least squares estimators are sensitive to the presence of observations that lie outside the norm for the regression model of interest. The sensitivity of conventional Regression methods to these outlier observations can result in coefficient estimates that do not accurately reflect the underlying statistical relationship, therefore to test our hypotheses, other analyses are performed using a Robust Least Squares.

In robust statistics, robust regression is a form of regression analysis designed to circumvent some limitations of traditional parametric and non-parametric methods. Regression analysis seeks to find the relationship between one or more independent variables and a dependent variable. Certain widely used methods of regression, such as ordinary least squares, have favorable properties if their underlying assumptions are true, but can give misleading results if those assumptions are not true; thus ordinary least squares are said to be not robust to violations of its assumptions. Robust regression methods are designed to be not overly affected by violations of assumptions by the underlying data-generating process.

Two separate sets of regressions were run. In the first set of regressions (models 1 and 2), all of the control variables were entered into the regression in two steps. In the first step, the control variables were entered into the regression; in the second step, the independent variables were entered (culture dimensions).

First, estimate the model employing only the firm-level control variables. the estimating equation for this model is as follows:

$$DTA_t^i = \alpha_0^i + \beta_1^i SIZE + \beta_2^i PROF + \beta_3^i FIXASS + \varepsilon_t^i \quad (1A)$$

Here, DTA_t^i denotes the debt to assets ratio for firm i in year t , α_0^i is the overall constant, β is the respective coefficient vectors and ε_t^i is the error term. Unequal variance in residuals is tested in both dimensions by conducting the following tests: Breusch-Pagan LM, Pesaran scaled LM, Bias-corrected scaled LM, and Pesaran CD.

We estimate equation (1) twice – once for the short-term debt to assets ratio, and again for the long-term debt to assets ratio.

By adding the culture dimensions, we get the following equation

$$DTA_t^i = \delta_0^i + Firm\ control + \delta_1^i INDV + \delta_2^i FAT + \delta_3^i HIER + \delta_4^i EGL + \varepsilon_t^i \quad (2AA)$$

III.3.2 Models of corporate investment policies

From the consideration of the previous studies of the determinants of investment policies and Shao et al (2013) all analysis performed using a linear mixed model, controlling for firm-level characteristics. Analyzing the data through ordinary least squares (OLS) regressions, and then we show that the effects of risk cultures dimensions on total long-term investment and its components (capital expenditure) in OLS regressions are robust in system generalized method of moments (GMM). the estimating equations for the models are as follows:

$$LTI_t^i = \alpha_0^i + \alpha_1^i SIZE + \alpha_2^i CASHFLOW + \alpha_3^i LEVERAGE + \varepsilon_t^i \quad (1B)$$

The dependent variable LTI is the long-term investment (capital expenditure) of firm *i* in year *t*, we control lagged firm characteristics including firm size, cash flow, leverage.

$$STI_t^i = \alpha_0^i + \alpha_1^i SIZE + \alpha_2^i CASHFLOW + \alpha_3^i LEVERAGE + \alpha_5^i NWC + \varepsilon_t^i \quad (2BB)$$

The dependent variable STI is the short-term investment (the cash and cash equivalent /Assets) we additionally control lagged net working capital.

IV. The Empirical Study

The results of the OLS models are organized in a structure consistent with the findings and are presented in Table 2 as follow without entering the risk culture variables:

Coefficient of Model (1A, 1AA,1AAA,1AAAA) for long-term debt show the panel estimation model to determine the most significant independent variable to impact on the level of long-term debt, followed by conducting Redundant fixed effects test; the test of cross-sectional and period effects, cross-sectional fixed effects, finally time series fixed effects respectively. The same test conducted for short-term debt, long-term investment and short-term investment.

Table (2) Summarize the determinants of capital structure and investments (all OLS models)

Explanatory variables	Model (1A)		Model (1AA)		Model (1AAA)		Model (1 AAAA)	
	Coeff.	P	Coeff.	P	Coeff.	P	Coeff.	P
<i>Firm characteristics</i>								
Firm Size	0.163529	0.0001***	0.006685	0.0001***	0.061290	0.0405**	0.006699	0.0001***
Profitability	-0.038310	0.7211	-0.276346	0.0447	-0.052507	0.6558	-0.268808	0.0460*
Fixed assets	-0.093511	0.0161*	0.155348	0.0000***	-0.117908	0.001***	0.155130	0.0000***
For Short-term debt								
	Model (2A)		Model (2AA)		Model (2AAA)		Model (2 AAAA)	
	Coeff.	p	Coeff.	p	Coeff.	P	Coeff.	P
Firm Size	-0.097222	0.2471	0.024311	0.0037**	0.110169	0.0573	0.024662	0.0031**
Profitability	-0.072350	0.6787	0.244747	0.1319	-0.060674	0.7907	0.238345	0.1009
Fixed assets	-0.232151	0.0124*	-0.490843	0.001***	-0.186805	0.0302*	-0.489542	0.001***
Liquidity	-0.092452	0.0013**	-0.288854	0.001***	0.110169	0.0042**	-0.290117	0.001***
For Long-term investment								
	Model (1B)		Model (1BB)		Model (1BBB)		Model (1 BBBB)	
	Coeff.	p	Coeff.	p	Coeff.	P	Coeff.	p
Firm Size	0.096749	0.0198*	-0.023992	0.000***	-0.029742	0.2357	-0.024111	0.001***
Leverage	0.199182	0.0060**	0.102602	0.000***	0.225142	0.001***	0.100822	0.001***
Cash flow	-0.184590	0.0030**	-0.005309	0.8991	-0.169850	0.0033**	-0.007140	0.8645
For Short-term investment								
	Model (5.2B)		Model (5.2BB)		Model (5.2BBB)		Model 5.2 BBBB)	

	Coeff.	<i>p</i>	Coeff.	<i>p</i>	Coeff.	<i>P</i>	Coeff.	<i>p</i>
Firm Size	0.088301	0.3736	0.013525	0.1586	0.046030	0.5757	0.013853	0.1398
Leverage	-0.370512	0.0003***	-0.167533	0.000***	-0.354942	0.0016**	-0.170686	0.001***
Cash flow	0.470474	0.0010**	0.544886	0.000***	0.431970	0.001***	0.530130	0.000***
NWC	-0.252441	0.3736	-0.103510	0.0015**	-0.285350	0.0411*	-0.109598	0.001***

Risk Culture variables & testing hypotheses:

Robust Least Squares analysis was used to test our main hypotheses. The results of the Robust Least Squares models are organized in a structure consistent with these findings and are presented in Table 3, which is divided into 4 Panels A to D. Panels A, and B give the results of the regressions where the dependent variables are long-term debt and short-term debt respectively, Panels C & D give results from the regressions where the dependent variables are long-term and short-term investment.

Table (3) The determinants of capital structure and investments (RLS)

Explanatory variables	Panel A Model (3A) (LTD)		Panel B Model (3AA) (STD)		Panel C Model (3 B) (LTI)		Panel D Model (3BB) (STI)	
	Coeff.	<i>P</i>	Coeff.	<i>P</i>	Coeff.	<i>p</i>	Coeff.	<i>p</i>
<i>Firm characteristics</i>								
Firm Size	-0.090682	0.001***	-0.041653	0.0363**	-0.070142	0.000***	0.035396	0.000***
Profitability	-2.035825	0.0120**	-0.561066	0.0065**	-	-	-	-
Fixed assets	0.024348	0.6525	-0.710690	0.0000**	-	-	-	-
Liquidity	-	-	0.000856	0.9920	-	-	-	-
Leverage	-	-	-	-	0.189258	0.1443	-0.043872	0.2985
Cash flow	-	-	-	-	0.170882	0.5538	0.504778	0.000***
NWC	-	-	-	-	-	-	-0.297508	0.000***
Hierarchical	-0.062760	0.0049**	0.160296	0.000***	-0.069428	0.4600	0.109449	0.0002***
Individualism	0.160197	0.001***	0.143598	0.0114**	0.009044	0.8132	-0.174108	0.000***
Egalitarianism	-0.011154	0.8138	-0.161473	0.000***	0.037506	0.4618	-0.090764	0.000***
Fatalism	0.162847	0.0296*	-	-	-0.047436	0.0362**	-	-

Significance level at: *** at (0.001) level, ** at (0.01) level, * at (0.05) level.

V. Results

V.1 We summarize our results as follow:

Individualism has a significant positively relationship to long-term debt and short-term debt, but individualism more significant for long-term debt than short-term debt, also Individualism has a positive relationship but not significant to long-term investment (risky investment) and has a significant negatively relationship with short-term investment (safe investment). These results reveal that individualistic culture more risk taking, the individualistic invest more in risky investment (long-term) and rely on long-term debt. In other words, risk-taking is found to be higher for individualistic culture.

Hierarchical has a significant negatively relationship with long-term debt and a significant positively relationship with short-term debt, also Hierarchical has a negative relationship but not significant to long-term investment (risky investment) and has a significant positively relationship with short-term investment (safe investment). These results reveal that hierarchical culture less risk taking, the hierarchical invest more in safe investment (short-term) and rely on short-term debt.

Egalitarian has a negative relationship with long-term debt but not significant and a significant negatively relationship with short-term debt, also Egalitarian has a positive relationship but not significant to long-term investment (risky investment) and has a significant negatively relationship with short-term investment (safe investment). These results reveal that egalitarian less risk taking, the Egalitarian invest less in risky investment (long-term) and don't prefer long-term debt and short-term debt. These results consistent with our expectation that Egalitarian prefer to choose independent business thus, they don't prefer long or short-term debt, rely more on retained earnings and equity.

Fatalism has a significant positively relationship with long-term debt, the relationship between fatalism and short-term debt not tested. Also, fatalism has a significant negatively relationship to long-term investment (risky investment), and the relationship with the short-term investment not tested. These results reveal that fatalism culture less risk taking, the fatalism avoids investing in a risky investment and rely on long-term debt.

V.2 Further results

Along with the rise of behavioral corporate finance, studies of financing decisions based on managerial risk attitudes and risk behaviors are becoming a new direction of modern capital structure theory and investment decision. Accordingly, this paper uses CFO, CIO, and CRO to assess manager's personality traits, managerial risk attitudes, and managerial risk behaviours furthermore, find out the link between a specific type of risk culture, managerial risk attitudes and risk behaviours. Our survey not only quantifies behavioural traits of senior managers but also gathers information related to the career path, education, experiences and demographic characteristics of the managers.

i- The interrelationship among the four risk culture dimensions

There is a significant positive relationship between individualism and Fatalism. Also, there is a significant positive relationship among hierarchical and individualism, egalitarianism, and fatalism.

Also, there is a significant positive relationship between egalitarianism and fatalism.

ii- The relationship among the four risk culture dimensions and managerial risk attitudes and managerial risk behaviours

There is a significant positive relationship among hierarchical, managerial risk attitudes, and managerial risk behaviours. Also, egalitarianism and fatalism have a significant positive relationship with risk attitudes and risk behaviours. Interestingly that the individualism has no significant relationship with risk attitudes and risk behaviours.

Also, we have interesting results that the only Egalitarianism has a significant relationship with managerial risk attitudes, managerial risk behaviours, and theories and techniques managers rely on it or we can say prefer.

iii- Results related to time effects

It is true to say that the period from 2010 to 2015 is critical time in Egypt for this reason, we study the time effect of period, the results as follow:

For long-term debt: from 2010-2012 the firms more reliant on long-term debt. From 2013-2015 the firms less reliant on long-term debt, this results may be the firms have sufficient retained earnings thus rely less on external funds, or may be managers tend to avoid the disciplinary role of debt.

For short-term debt: from 2010-2012 the firms more reliant on short-term debt. From 2013-2015 firms become less reliant on long-term debt.

For long-term investment: from 2010-2013 the firms invest more in long term investment (risky investment). From 2014-2015 the firms invest less in long-term investment, this results not expected because within this specific period many foreign investors get out of the market because they fear from the situation in Egypt. At the same time the Egyptian companies increase their long-term investment to support our economy actually, this results linked to a specific type of risk culture, but this point needs more investigation in further researches.

For short-term investment: the year 2010 and 2015 the firms invest more in short-term investment BUT from 2011-2014 firms invest less in short-term investment although it is more safe during a very uncertain period (it should be linked to a specific type of risk culture).

VI. Conclusions

As emerges from Table (5-31) and Table (5-32) the results, in particular from the panel data procedure, seem to support the predictions. It is illustrated that the factors previously found to be important in determining the capital structures and investment decisions of firms, have a similar influence on the capital structure and investment decisions of non-financial, listed Egyptian firms. The main conclusions are as follow.

The Size of the firms and fixed assets appear more important to the capital structure decision than profitability for long-term debt.

But for short-term debt; the liquidity of the firms appears more important to short-term debt than firm size and profitability.

Otherwise, the leverage appears more important to long-term investment decision than firm size and cash flow. BUT the cash flow of the firms more important to short-term investment decision

All in all, and in the context of Egyptian firms it may be generalized that trade-off, pecking order consideration all play an important role in determining capital structure decisions.

Risk culture dimensions play a critical role in determining and deciding capital structure and investment decision. First; the importance of hierarchical is strongly supported by the results of long-term debt, short-term debt, and short-term investment. Second; the importance of individualism is strongly supported by the results of long-term debt, short-term debt and short-term investment. Their; egalitarianism is strongly supported by the results for short-term debt, and short-term investment. Fourth; fatalism is strongly supported by the long-term debt and long-term investment.

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