The Managerial Ability and Value of Cash: Evidence from Iran

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ABSTRACT

This study investigates empirically the value investors place in excess cash hold-ing and how managerial ability impact on the value of cash holding for Iranian firms from 2006 to 2014. In this research, managerial ability calculated by using the data envelopment analysis (DEA). Following the approach of Faulkender and Wang, we find that the relation between managerial ability and value of cash hold-ing and the level of cash is positive and significant. This result indicates that when managers allocate cash resources efficiently, shareholders consider more value for the firm cash holding. Also, the result shows that if managers emphasize both long-term and short-term of resource management, investors set a higher marginal value of cash holdings. In the other words, the able management can improve the value of cash holding by the focusing on the spending resource for both long and short-term periods.

1. Introduction

An interesting fact of the financial market is that firms have cash holdings in excess of their market value and cash holdings is an important subject in financial management of firms. Management chooses to hold cash for various reasons, which in, all maximize firm value. In their valuation of the firm, investors implicitly assign a value to these cash holdings based on their assessment of the proba-ble use of the funds, Pinkowitz and Williamson, [43]. Based on traditional method, cash holdings are regarded as zero NPV investments. One-dollar cash will bring about one-dollar increase in the value of the firm. In perfect capital markets, it is expected to obtain the result mentioned above, Jiang and Liu, [32]. But, this result may not hold in imperfect capital markets.

With market imperfections, such as information asymmetry and agency problems, the firm holds an "optimal" level of cash that enables it to reduce transaction costs and simultaneously use cash as a strategic tool to capitalize on its growth opportunities, Ramezani, [46]. Due to information asymmetry, Myers and Majluf [37] expected investors would require the firm to pay a premium for external funds, which makes external financing more expensive than internal financing for profitable projects, with positive NPV.

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Therefore, a dollar of cash held can be valued at more than a dollar by investors. On the other hand, Jensen [31] presented free cash flow theory the base on the agency costs to explain the management's motivation to hold cash and found that the management may be implement low-value NPV opportunities with self-interest motivation. The low-value NPV opportunities can decrease the value of cash holdings. The primary empirical studies of cash holdings e.g., Opler, Pinkowitz, Stulz, and Williamson [43] and Harford [23] examine the cross-sectional variation in the level of cash holdings. The result shows that the firms with stronger growth opportunities, riskier cash flows and more financial constraints hold higher cash balances, Faulkender and Wang, [18].

The recent empirical studies move to response the question of what value that investors assign to the cash holdings of a firm. According the research of Faulkender and Wang [18] the investors assign a value to one additional dollar of cash holdings should vary considerably depending on whether that dollar is more likely to go to (1) increasing distributions to equity, (2) decreasing the amount of cash that needs raising in the capital markets, or (3) serving debt or other liabilities of the firm Wang [52],Faulkender and Wang [18].

In prior research such as Ditmar and Mahrt-Smith [12] and Harford et al [24] they examined the role of corporate governance on the value of cash holding. In their studies emphasize the governance mechanism on the cash holding and the effect of managerial ability is ignored. The identification of the role of manager characteristics on the firm performance is the important question in the accounting, finance, and economicstudies, Demerjian et al [9], [10], Malmendier and Tate [36], and Haris and Holmstrom [25]. The manager characteristics comprise ability, talent, reputation, skill, and so on. Gaines-Ross [27] and Van Eekelen and Ebert [51] believe that managerial ability is the most important of manager features which can influence the firm value and strategic decision-making. Van Eekelen and Ebert [51], investigate the effect several managerial characteristics on the cash holding. The results indicate that managerial characteristics play a role in optimal cash levels. Agrawal et al. [3] shows that management quality (management reputation) can increase the future firm performance. They find that firm paid the high executive compensation levels due to management abilities has the most value in the capital market. If cash holding is not used optimally by the managers, shareholders assess the firm value less than another firm.

Our purpose of this research is to investigate the relationship between managerial ability and the value of cash holding in listed firms in Tehran Stock Exchange (TSE).

The primary and principal question of this study is whether managerial ability has an effect on the value of cash holding in the emerging capital market of Iran or not. This paper contributes to both the managerial ability literature and the value of cash holding literature by finding a positive and significant relation between managerial ability and value of cash holding.

A key distinction between our study and prior studies, such as Demerjian [9] is the differences in the research design. Against the prior studies that managerial ability measurement by using the noncurrent assets (i.e. fixed assets).

This research considers the role of managerial ability in working capital management and capital structure. The other contribution of this study is using the Directional Distance Function (DDF) method for the measurement of the managerial ability. Finally, the research results can help in better understanding the role managerial characteristic in increase the value of cash holding.

The rest of this paper organized as follows. Section 2 reviews the prior literature and hypothesis development. Section 3 discusses the data and research design. Section 4 reports the empirical results, and section 5 is a summary and conclusions.

2. Literature Review and Hypothesis Development

In this section the several of the research which related to the subject examined and then, the research hypothesis is developed.

2.1 Managerial Ability

Managerial ability is an important characteristic which firms consider to the employment and pay the compensation because of managerial ability can affect the optimal use and allocation of resources. The able manager makes a decision to maximize the firm value. To reach this aim, able manager does continually strategic decision and planning in direct to raise the firm value.

Prior study in accounting and finance literature measure the managerial ability by proxies such as market mechanisms, management forecast quality, CEO reputation and management-level efficiency. The first proxy used in studies, such as Hayes and Schaefer [26],Chane eat al [5] and Baik et al. [4]. Hayes and Schaefer [26], reports that firms experience more negative abnormal returns when loss the managerial ability. Change et al. [5], examines that how the CEO ability can lead to differing in firm performance and CEO payment. The result provides evidence about the relationship between managerial ability and firm value and performance.

Baik et al. [4], finds that capital market reaction increase to the news in management forecasts disclosed by high CEO ability than other managers. The proxy of management forecast quality is adopted in studies such as Farrell and Whidbee [16], Lee et al. [34] and Goodman et al. [29]. Farrell andWhidbee [16], measure CEO ability by forecast errors. The results indicate that an inverse relation between the likelihood of CEO turnover and analyst forecast errors. Lee et al. [34] reports that when firm performance is weak, the probability of CEO turnover has positively related to the magnitude of forecast errors. Goodman et al. [29], shows that firm investment decisions can improve when the forecast errors of managers is decreased.

In studies such as Milhoum [38], Francis et al. [21], and Baik et al. [4] CEO reputation used as a proxy for the managerial ability. Milhoum [38], reports that CEO reputation is positively associated to stock-based pay sensitivities. Francis et al. [21], shows that CEO reputation has a positive effect on earnings quality. Finally, Demerjian et al. [9] , Demerjian et al. [10] , Siao and Chou [49] , Ko et al. [33] and Gan et al. [28], use the managerial-level efficiency as a proxy of managerial ability.

In those papers, managerial-level efficiency measured by the Data Envelopment Analysis (DEA) method which presented by Demergian et al. [9]. Gan et al. [28], examines that whether CEO managerial ability effects on the value of cash.

The result suggests that managerial ability plays a significant role in improving the value of cash. Ko et al. [33] shows that managerial ability can influence the tax avoidance and hence, managerial ability leads to increase the firm value. Demerjian et al. [10] reports that relation between the managerial ability and earnings quality has an effect on the quality of decision-making about earnings. Siao and Chou

[49], examine the relation between managerial ability and value of cash. The results indicate that managerial ability increases the value of cash holding.

2.2. The level and value of cash holding

Accounting and finance literature on cash holding represent by Keynes. The base of Keynes opinion, firms can have cash holding because of the lower transaction and to solve unexpected events. In the following, researchers use the three theoretical models to state which firm specification impact on cash holding decision, Ferreira and Vilela, [20]. The first theory is a trade-off model developed by Miller and Orr. The base of the trade-off model, the firm has determined the optimal level of cash holding by balancing the marginal cost and marginal benefits. Opler et al. [40],Faulkender [17],Ozkan and Ozkan [41] and Al-Najjar and Belghitar [1], supported the trade-off theory. The second theory is pecking order theory which supported by Myers and Majluf [37].

They state that to decrease asymmetric information cost and financing cost, firms prefer to use the retained earnings, and then debt and finally equity. Dittmar et al. [12], Ferreira and Vilea [20] and Al-Najjar and Belghitar [1], supported the pecking order theory. In finally, theory illustrates the free cash flow theory which developed by Jensen [31]. The free cash flow theory shows that management has motivated to make cash because of raise their control on assessing and to reach more power over the decision-makings. Tang [50], Dittmar and Mahrt-Smith [12] , Pinkowitz et al. [43] and Harford et al. [24], supported the free cash flow theory.

The base of Modigiliani and Miller [39] research, decision-making about investment opportunity does not depend on the internal resource. Thus, if the investment has value-increasing, firms can use external capital. This result holds in a perfect market. However, because of agency problem and imperfect market, the internal and external capital is different, Fazzari et al. [19]. Thus, by using the internal cash, we can increase the firm value. This role of internal cash can be even stronger if the firm has a favorable investment opportunist, Myers and Majluf [37].Faulkender and Wang [18] show that when firms have the lowest level of internal cash and obliged to use the external financing to increase cash to capture value-enhancing investment opportunities, their cash has a marginal value higher than one dollar.

Denise and Sibilkov [11] report that the marginal value of cash is increasing for constrained firms. Harford et al. [24] and Dittmar and Mahrt-Smith [12], examine the association corporate governance and the value of cash holding. The result indicates that good governance can increase the value of cash. Chan et al. [6] investigates the impact of financial constraints, investment policy, product market competition and corporate governance on the value of cash holdings. They find the limited evidence of an association between corporate governance and the value of cash holdings. Recently, researchers have examined the role of managerial ability on the value of cash holding. The able manager tries to use the resource efficiency in the decisions of firm investment. Gan et al. [28] and Sio and Chou [49], find that the managerial ability improves the value of cash holding.

2.3. Empirical Hypotheses

In the prior studies such as Dittmarand Mahrt-Smith [12] and Harford et al. [24] report that corporate governance impacts the value of cash holding. Corporate governance includes internal and external

mechanism for monitoring over the firm. The one of internal mechanism is managerial ability. The able manager can be used efficiently the firm resources by identification the opportunity set of the firm. Also, if able managers invest in negative NPV projects, their loss the reputation and future compensation. So, the able manager has an incentive to use efficiently resources within the firm for a long and short-term period. As a result, shareholders consider a more value for cash holding in the firm that have the efficient utilization of resource for both long and short-term periods. Therefore, the first hypothesis is designed as follows:

Hypothesis 1: The value of cash holdings increases in firms with high managerial ability.

Investment decision making conveys a signal about managerial ability, Gan et al. [28]. Thus, managers have an incentive to utilize optimally the firm assets and investment in positive NPV projects. In this case, managers can hold large cash in order to more successful in projects implementation. Thus, we expect that high able manager to hold higher cash balances. Therefore, the second hypothesis is designed as follows:

Hypothesis 2: Firms of higher managerial ability hold more cash reserves.

3. Data and Research Design

3.1. Sample Selection

The data for this paper contains companies listed on the Tehran Stock Exchange (TSE) across the period from 2006 to 2014. Financial data are collected from the Tehran Stock Exchange (TSE) database and managerial ability data account the base on the methodology described in Demerjian et al. [9]. The sample selection criteria are:

1. The end of fiscal year is March 2006;
2. The end of fiscal year aren't change over the period of 2006-2014;
3. Their basic operations aren't investment, insurance and banking;
4. Data are available in this period.

Given to the above criteria, final sample included 81 firms.

3.2. Measures of managerial ability

In this research, we use the Data Envelopment Analysis (DEA) to estimate firm efficiency. The first model to solve the problem is defined as CCR, which was initially proposed by Charnes, Cooper and Rhodes, Charnes et al. [7]. The CCR model is used for evaluating decision making unit (DMU) with positive inputs and outputs. This method is applied by Demerjian et al. [9], indicates that the firms use capital, labor and intangible assets to generate revenues. Thus, data envelopment analysis (DEA) used to solve the following optimization problem:

$$Max_v^\theta = \frac{SAlse}{v_1 COGS + V_2 SG\&A + v_3 PPE + v_4 INTAN} \tag{1}$$

DEA score shows the degree to which the firm is efficient and is from zero to one. The score of less than one indicates that the firms need to reduce costs or increase revenue. The DEA score measures the efficiency includes both the firm and manager which similar to traditional proxy such as return on assets (ROA). Given to Demerjian et al. [9] research, we separate the firm efficiency from managerial ability by using the following regression:

$Firm\ Efficiency =$
$\beta_0 + \beta_1 LN(Total\ Assets) + \beta_2 Market\ Share + \beta_3 Positive\ Free\ Cash\ Flow +$
$\beta_4 LN(Firm\ Age) + \beta_5 Foreing\ Currency\ Indicator + \varepsilon_{it} \tag{2}$

Positve Free Cash Flow is dummy variable. That is equal to one if operating cash flow is positive and else is zero. *Foreing Currency Indicator* is dummy variable. That is equal to one if the firm has export sales and else is zero. The residual from the estimation is the managerial ability.

In research of Demerjian et al. [9], emphasized the noncurrent assets (i.e. fixed assets) and the component of operating costs.

However, accounting and finance researchers show that the decision-making of managers on working capital management and interest expense in capital structure can influence the firm performance,Shin and Soenen [48], Filbeck and Krueger [22], Enqvist et al. [15], Pais et al. [42], Modigliani and Miller [39], El-SayedEbaid [14],Salim and Yada [47] and Akeem et al. [2] .Thus, we add the working capital management and interest expense to input that applied by Demerjian et al. [9].In this study, working capital management refers to the difference between current assets and current liabilities. The number of working capital management can positive or negative. Thus, the CCR model is not suitable. To solve this problem, Portela et al. [44] proposes a Directional Distance Function (DDF) model. In this model, the non-zero direction vector $\bar{g} = (-R_o, S_o)$ is chosen for DMU_o

$z_{o=}(x_o, y_o)$ with

$$R_{io} = x_{io} - min\{x_{ij}, j = 1,2,\dots,n\}, i = 1,2,\dots,m$$
$$S_{ro} = max\{y_{rj}, j = 1,2,\dots,n\} - y_{ro}, r = 1,2,\dots,s$$

Thus, in variable returns to scale case, the following LP problem needs to be solved:

Max $\quad \beta$
s.t. $\sum_{j=1}^{n} \lambda_j X_{ij} \leq x_{io} - \beta R_{io}$, $i = 1,2,\dots,m$
$\sum_{j=1}^{n} \lambda_j Y_{rj} \geq y_{ro} + \beta S_{ro}$, $\quad r = 1,2,\dots,s$
$$\sum_{j=1}^{n} \lambda_j = 1$$
$\lambda_j \geq 0, \quad j = 1,2,\dots,n$

3.3. Valuation of Cash and Level of Cash Models

In order to the test of hypotheses presented in H_1-H_2, we used the multiple regression models which are used in Fulkender and Wang [18] and Opler et al. [40]. The model of Fulkender and Wang [18] augments to contain the variable of managerial ability. This model is used for the test of hypothesis 1. For the test of hypothesis 2, we used the model of Opler et al. [40].In these models, the depended variables are the stock price and cash balance. Also, the independent variable is the managerial ability. Equations are illustrated as the following:

$$\frac{\Delta M_{it}}{M_{it-1}} =$$
$$\beta_0 + \beta_1 \frac{\Delta CASH_{it}}{M_{it-1}} + \beta_2 \frac{\Delta EARN_{it}}{M_{it-1}} + \beta_3 \frac{\Delta NA_{it}}{M_{it-1}} + \beta_4 \frac{\Delta INT_{it}}{M_{it-1}} + \beta_5 \frac{\Delta DIV_{it}}{M_{it-1}} + \beta_6 \frac{CASH_{it-1}}{M_{it-1}} + \beta_7 LEV_{it} + \beta_8 \frac{NF_{it}}{M_{it-1}} +$$
$$\beta_9 \frac{\Delta CASH_{it}}{M_{it-1}} * \frac{CASH_{it-1}}{M_{it-1}} + \beta_{10} LEV_{it} * \frac{\Delta CASH_{it}}{M_{it-1}} + \beta_{11} ABILITY_{it} + \beta_{12} ABILITY_{it} * \frac{\Delta CASH_{it}}{M_{it-1}} + \varepsilon_{it} \qquad (3)$$

Where ΔX show that change in the variable X for firm i the prior year to the specified year; M_{it} is depended variable (i.e. the market value) that calculated by multiple stock price and number of stock issuance;$CASH_{it}$ is the cash holding of firm;$EARN_{it}$ is the operation earning;NA_{it} is the net assets that is calculated by total assets minus cash;INT_{it} is the interest expense; DIV_{it} is the common dividends; LEV_{it} is market leverage that is calculated by total debt divided by total assets;NF_{it} is net financing. The variable of$ABILITY_{it} * \frac{\Delta CASH_{it}}{M_{it-1}}$ adds to test of first hypothesis. It is expected that the coefficient of the interaction between cash and managerial ability is significant and positive.
According to hypothesis 2, we used the model of Opler et al. [40] as the following.

$$CASH_{it} = \beta_0 + \beta_1 SIZE_{it} + \beta_2 MB_{it} + \beta_3 CF_{it} + \beta_4 NWC_{it} + \beta_1 LEV_{it} + \beta_1 D\_DUM_{it} + \beta_1 CAPX_{it} + \beta_1 ABILITY_{it} + \varepsilon_{it} \qquad (4)$$

Where $CASH_{it}$ is the cash holding firm that adjusted by the beginning year of market value; $SIZE_{it}$ is the natural logarithm of total assets;MB_{it} is calculated by summing of total debt plus the market value divided by total assets;$CF_{it}$is computed by operating income before the depreciation and amortization minus interest minus taxes minus common dividends as the numerator and total asset minus cash as the denominator;NWC_{it} is the net working capital (current assets minus cash, minus current Liabilities) adjusted by total asset minus cash; D_DUM_{it} is a dummy variable that is equal to one if the firm paid a common dividend and other situation is zero; $CAPX_{it}$ is calculated by capital expenditure divided by total asset minus cash. The variable $ABILITY_{it}$ adds to test of second hypothesis. It is expected that the coefficient of managerial ability is significant and positive.

4. Empirical Results

4.1. Descriptive statistics

Table 1 presents descriptive statistics for each of the variables used in the estimating equations. The result shows that the mean and median of managerial ability score in CCR and DDF method is 0.000

and -0.004 and -0.016 and 0.002, respectively. The result of CCR method is consistent with Demerjian et al. [9].

Table 1: Descriptive Statistics for the period 2006- 2014

Variables	$\Delta CASH_t$	$\Delta EARN_t$	ΔMV_t	ΔINT_t	ΔDIV_t	$CASH_t$	LEV_t	NF_t
mean	0.008	0.012	0.370	0.025	0.482	0.041	0.628	0.016
median	0.003	0.028	0.048	0.005	0.000	0.029	0.636	0.000
Std.Dev.	0.124	0.328	0.105	0.122	0.535	0.042	1.081	7.932
variables	CCR	DDF	ROA	$SIZE_t$	MB_t	NWC_t	$CAPEX_t$	NA_i
mean	0.000	-0.004	0.181	5.893	1.719	0.029	0.287	0.196
median	-0.016	0.002	0.153	5.806	1.315	0.034	0.254	0.139
Std.Dev.	0.161	0.077	0.160	0.632	1.28	0.020	0.184	0.847

4.2. Managerial ability and cash valuation

The based on the result of chow test and Hausman test (Gujarati [30], we used the pooled regressions for testing of hypothesis. In table 2 presented regression summary statistic for the value of cash holdings. The coefficient estimates, t-statistics, and R^2 value are presented for the first hypothesis. We estimate the original model proposed by Faulkender and Wang [18].The coefficients on changes in earnings, changes in dividends and the level of cash holdings are positive and significant in all four columns (except the level of cash holdings in third column). This result is consistent with the studies of Faulkender and Wang [18],Dittmar and Mahrt-Smith [12] and Liu and Mauer [35].The results reveal that in all of the interactions of managerial ability with the cash holing have positive and significant coefficients (i. e. the coefficient of variables is 4.38, 3.46 and 12.81 and the t-statistic of variables is 16.8, 8.37 and 28.49). This result indicates that the value of excess cash holding raise with managerial ability. This result is consistent with Siao and Chou [40] and Gan et al. [28]. In the original model, the marginal value of cash is valued 2.01 (7.32+ (0.041*0.39) + (-8.33*0.628)) by Shareholders. Similar to above, the marginal value of cash to investors in managerial ability proxies that calculated based on CCR and DDF methods are 2.25 (8.03+ (0.041*0.77) + (-9.21*0.628) + (4.38*0.000)) and 3.57 (7.66+ (0.041*-1.95) + (-6.35*0.625) + (3.46* -0.004)) respectively. Based on these results, the value of cash holdings in firms with managerial ability in the efficient utilization of short-term and long-term resources is more than other firms.

Table 2 : The result of test managerial ability and value of cash holding

		Managerial Ability proxies		
Variables	Base Model	**DEA_Score(CCR)**	*DEA_Score(DDF)*	*ROA*
$\Delta CASH_t$	7.32 (40.96)*	8.03 (43.84)*	7.66 (43.77)*	4.58 (22.79)*
$\Delta EARN_t$	0.24 (17.80)*	0.25 (18.57)*	0.07 (5.33)*	0.33 (23.07)*
ΔNA_t	-0.22 (-44.82)*	-0.22 (-43.51)*	-0.19 (-39.63)*	-0.25 (-50.25)*

ΔINT_t	1.22 (32.15)*	1.19 (31.42)*	1.53 (41.76)*	1.23 (32.73)*
ΔDIV_t	0.63 (79.68)*	0.63 (79.22)*	0.59 (75.89)*	0.63 (79.23)*
$CASH_{t-1}$	0.56 (14.84)*	0.62 (16.57)*	-1.90 (-56.23)*	0.60 (15.90)*
LEV_t	0.46 (20.49)*	0.46 (20.86)*	0.69 (32.36)*	0.41 (16.69)*
NF_t	-0.002 (-4.94)*	-0.002 (-4.86)*	-0.002 (-5.72)*	-0.002 (-4.62)*
$CASH_{t-1} * \Delta CASH_t$	0.39 (6.20)*	0.77 (11.51)*	-1.95 (-31.40)*	0.60 (9.51)*
$LEV_t * \Delta CASH_t$	-8.33 (-37.61)*	-9.21 (-40.57)	-6.35 (-28.93)*	-6.15 (-26.41)*
$ABILITY_t$		-0.10 (-3.89)*	0.26 (5.10)*	-0.22 (-7.40)*
$ABILITY_t * \Delta CASH_t$		4.38 (16.88)*	3.46 (8.37)*	12.81 (28.94)*
Adjusted R-squared	0.18	0.18	0.22	0.19
Durbin-Watson stat	2.36	2.38	2.34	2.37
F-statistic	1318.63 (0.00)*	1128.42 (0.00)*	1403.08 (0.00)*	1185.47 (0.00)*
*= Significant at or below the 0.05 level.				

4.3. Managerial ability and the level of cash holdings

The based on the result of chow test and Hausman test (Gujarati [30], we used the pooled regressions for testing of hypothesis. The result of hypothesis 2 is reported in table (2). We address our second hypothesis by estimating the relation between managerial ability and cash level. First, the original model proposed byOpler et al. [40] estimated. That result indicates that the directions of the coefficient market to book ratio and cash flow are similar with Opler et al. [40], Siao and Chou [49] and the directions of the coefficient size, net working capital, leverage, and dividend dummy are consistent withSiao and Chou [49]. The results show that in all of the interactions of managerial ability with the cash level have positive and significant coefficients (i. e. the coefficient of variables is 0.011, 0.005 and 0.044 and the t-statistic of variables is 13.29, 1.98 and 27.41). This result indicates that managerial ability impact on the level of cash. This result is consistent with Siao and Chou [49]. Also, the coefficient of managerial ability for the use of long and short-term resource is less than that for utilization of long-term resource (i. e. o.oo5 < 0.011). This result shows that if managers consume the long and short-term resource efficiently, firms have not needed to increase the level of cash.

Table3: The result of test managerial ability and level of cash holding

		Managerial Ability proxies		
Variables	Base Model	DEA_Scoar(CCR)	DEA_Scoar(DDF)	ROA
$SIZE_t$	-0.009 (-17.94)*	-0,009 (-18.07)*	-0.009 (-17.80)*	-0.012 (-20.90)*
MB_t	0.004 (24.09)*	0.004 (22.35)*	0.004 (24.17)*	0.003 (20.78)*
CF_t	0.008	0.008	0.008	0.008

	(16.56)*	(16.76)*	(16.38)*	(15.45)*
NWC_t	-0.062 (-35.28)*	-0.063 (-36.01)*	-0.061 (-35.18)*	-0.074 (-41.63)*
LEV_t	-0.100 (-36.61)*	-0.100 (-54.49)*	-0.099 (-54.03)*	-0.090 (-47.31)*
D_DUM_t	-0.002 (-4.62)*	-0.002 (-3.98)*	-0.002 (-4.48)*	-0.003 (-5.09)*
$CAPEX_t$	-0.065 (-36.61)*	0.063 (-35.19)*	-0.065 (-36.64)*	-0.067 (-37.32)*
$ABALITY_t$		0.011 (13.29)*	0.005 (1.98)*	0.044 (27.41)*
Adjusted R-squared	0.28	0.28	0.28	0.29
Durbin-Watson stat	2.08	2.07	2.08	2.09
F-statistic	2558.91 (0.00)*	2301.85 (0.00)*	2275.15 (0.00)*	2387.74 (0.00)*
*= Significant at or below the 0.05 level.				

5. Summary and conclusions

In this study, we investigate the effect of managerial ability over the value of cash holding in emerging markets. Prior studies show that manager characteristics can effect on strategic decision making and the value of cash holding in both practice and theory. The general reasons for cash holding are precautionary motives and transaction. Prior studies indicate that a dollar of cash may be valued at more than a dollar by the capital market. Managerial ability is an important area in the academic studies and the several proxies generate to the measurement of managerial ability. The managerial ability defines as the ability of a manager to make profits through efficient utilization of company resources that reveal by investment decisions, revenue generating activities and/or cost-cutting efforts Choi et al. [8]. By these activities, the managers can improve the firm value and especially the value of cash holding.

The results show that the relation between managerial ability and value of cash holding and the level of cash is positive and significant. This result indicates that when managers spend cash resource efficiently, shareholders consider the more value for the firm cash holding. On the other words, this result provides the empirical evidence about that able manager can increase a more efficient use of cash holdings. In addition, by using the DDF method, we find that the marginal value of cash holdings in firms with managerial ability in the spend management of short-term and long-term resources is more than other firms. The base on the results, we recommend to the firms that examine the managerial ability when that employed managers. Also, we recommend to managers to consider the working capital management because of the positive effect on the value of cash holding. The future study should examine the role of financial constraints, investment policy and product market competition on the relation between managerial ability and the value of cash holding.

References

[1] Al-Najjar, B., *The interrelationship between capital structure and dividend policy: Empirical evidence from Jordanian data*. International Review of Applied Economics, 2011, 25(2), P.209–224.

[2] Akeem.l.B, Terek.E, Kiyanjui.M.W, Kayode A.M., *Effects of Capital Structure on Firm's Performance: Empirical Study of Manufacturing Companies in Nigeria*. Journal of Finance and Investment Analysis, 2015, 3(4), P. 39-57.

[3] Agrawal, A., Jaffe J.F., *The Post-Merger Performance Puzzle*. Advances in Mergersand Acquisitions1,2000, P. 7-41.

[4] Baik, B., Farber D., Lee, S., *CEO ability and management earnings forecasts*.Contemporary Accounting Research ,2011, 28(5) ,P.1645-1668.

[5] Chang, Y.Y., Dasgupta S., Hilary, G., *CEO Ability, Pay, and Firm Performance*.ManagementScience, 2010, 56 (10), P. 1633-1652.

[6] Chan, H.WH, Y.Lu, and H.F. Zhang .*The effect of financial constraints, investment policy, product market competition and corporate governance on the value of cash holdings.* Accounting & Finance,2013, 53(2), P. 339-366.

[7] Charnes, A., Cooper, W. W., and Rhodes, E.*Measuring efficiency of decisionmakingunits*.European Journal of Operational Research , 1978, 2 , P.429-444.

[8] Choi, W., Han, S., Jung, S. H., & Kang, T. *CEO's Operating Ability and the Association between Accruals and Future Cash Flows*. Journal of Business Finance &Accounting, 2015, 42(5), P.619-634.

[9] Demerjian, P., B. Lev, S. McVay. *Quantifying Managerial Ability: A New Measure andValidity Tests*. Management Science ,2012 ,58 (7), P. 1229-1248.

[10] Demerjian, P., B. Lev, M. F. Lewis, and S. McVay. *Managerial Ability and Earnings Quality*.The Accounting Review, 2013,88 (2), P.463–498.

[11] Denis, D. J. and V. Sibilkov. *Financial Constraints, Investment, and the Value of Cash Holdings*.The Review of Financial Studies ,2010,23 (1), P.247-269.

[12] Dittmar, A. and J. Mahrt-Smith. *Corporate Governance and the Value of Cash Holdings*.Journal of Financial Economics, 2007, 83, P. 599–634.

[13] Dittmar, A., Mahrt-Smith, J, &Servaes, H. *International corporate governance and corporate cash holdings*.Journal of Financial and Quantitative Analysis , 2003, 38(1), P. 111–133.

[14] El-SayedEbaid, I.*The impact of capital-structure choice on firm performance: empirical evidence from Egypt*. The Journal of Risk Finance, 2009, *10*(5), P. 477-487.

[15] Enqvist.J, Graham.M, and J.Nikkinen. *The impact of working capital management on firm profitability in different business cycles: Evidence from Finland*. Research in International Business and Finance, 2013, 32, P. 36-49.

[16] Farrella, K. A., and D. A. Whidbee. *Impact of firm performance expectations on CEO turnover and replacement decisions*.Journal of Accounting and Economics, 2003, 36, P. 165-196.

[17] Faulkender, M. W. *Cash holdings among small businesses*.Available at SSRN 305179.2002.

[18] Faulkender, M. and R. Wang. *Corporate Financial Policy and the Value of Cash*.TheJournal of Finance, 2006, 61 (4), P. 1957-1990.

[19] Fazzari, S. M., R. G. Hubbard, and B. C. Petersen. *Financing Constraints and Corporate Investment*. Brookings Papers on Economic Activity, 1988,1, P. 141-206.

[20] Ferreira, A., &Vilela, S.*Why do firms hold cash? Evidence from EMU Countries*.European Financial Management, 2004, *10(2), P.295–319.*

[21] Francis, J., A. Huang, S. Rajgopal, and A. Y.Zang. *CEO Reputation and Earnings Quality*.Contemporary Accounting Research, 2008, 25 (1), P.109-147.

[22] Filbeck, G., and Krueger, T. M.*An Analysis of Working Capital Management Results Across Industries*, Mid-American Journal of Business, 2005, 20(2), P.11-18.

[23] Harford, J. *Corporate cash reserves and acquisitions*, *Journal of Finance*, 1999, 54, P. 1969-1997.

[24] Harford, J., S. A. Mansi, and W. F. Maxwell.*Corporate Governance and Firm Cash Holdings in the US*.Journal of Financial Economics, 2008, 87, P. 535-555.

[25] Harris, M., and B. Holmstrom. *A Theory of Wage Dynamics*.Review of Economic Studies, 1982, 49, P. 315-333.

[26] Hayes, R. M., and S. Schaefer. *How much are differences in managerial ability worth?*Journal of Accounting and Economics, 1999,27, P.125-148.

[27] Gaines-Ross, L.*CEO capital: a guide to building CEO reputation and Company success, New York*: Wiley,2003.

[28] Gan, H. *CEO Managerial Ability, Corporate Investment Quality, and the Value of Cash*.PHD Thesis at Virginia Commonwealth University, 2015.

[29] Goodman, T. H., M. Neamtiu, N. Shroff, H. D. White.*Management Forecast Quality and Capital Investment Decisions*. The Accounting Review, 2013, 89 (1), P.331-365.

[30] Gujarati,D. *Basic Econometrics*. McGraw-Hill, 2004, Fourth Edition.

[31] Jensen, M. C.*Agency costs of free cash flow, corporate finance, and takeovers*. American Economic Review, 1986, 76(2), P. 323-329.

[32] Jiang, Z., & Liu, S. *The Performance of Companies and Cash Holdings the Crisis-China*. Working paper. 2014.

[33] KO, C. Y., PARK, J., & JUNG, H. *Managerial Ability and Tax Avoidance*.Advanced Science and Technology Letters, 2013, 1(1), P.1-4.

[34] Lee, S., S. R. Matsunaga, & C. W. Park. *Management Forecast Accuracy and CEO Turnover.* The Accounting Review, 2012,87 (6), P. 2095–2122.

[35] Liu, Y. and D. C. Mauer. *Corporate cash holdings and CEO compensation incentives*. Journal of Financial Economics, 2011, 120, P. 183-198.

[36] Malmendier, U. and G. Tate. *CEO overconfidence and corporate investment*.TheJournalof Finance, 2005, 85 (6), P. 2661-2700.

[37] Myers, S. and N. Majluf.*Corporate financing and investment decisions when firms have information that investors do not have*, Journal of Financial Economics, 1984, 13, P.187-221.

[38] Milbourn, T. T. *CEO reputation and stock-based compensation*. Journal of Financial Economics, 2003, 68, P. 233-262.

[39] Modigliani, F. and M. Miller.*The Cost of Capital, Corporation Finance and the Theory of Investment*. American Economic Review, 1958, 48 (3), P. 261–297.

[40] Opler, T., L. Pinkowitz, R. Stulz and R. Williamson. *The determinants and implications of corporate cash holdings.*Journal of Financial Economics, 1999, 52, P.23-46.

[41] Ozkan, A., &Ozkan, N. *Corporate cash holdings: An empirical investigation of UK companies.* Journal of Banking and Finance, 2004, 28, P. 2103–2134.

[42] Pais, M. A., & Gama, P. M. *Working capital management and SMEs profitability: Portuguese evidence.* International Journal of Managerial Finance, 2015, 11(3) 47-58.

[43] Pinkowitz, L., Stulz, R. M., & Williamson, R. *Does the contribution s of corporate cash holdings dividend to firm value depend on governance? A crosscountry analysis.*Journal of Finance, 2006, 61(6), P.2725–2751.

[44] Portela, M. S., Thanassoulis, E., & Simpson, G. *Negative data in DEA: A directional distance approach applied to bank branches.* Journal of the Operational Research Society,2004, 55(10), P. 1111-1121.

[45] Pinkowitz, L. F. and R. Williamson. *What is a Dollar Worth? The Market Value of Cash Holdings.*Working Paper.*Georgetown* University.2004.

[46] Ramezani, C. A. *Financial constraints, real options and corporate cash holdings.* Managerial Finance, 2011, 37(12), P. 1137-1160.

[47] Salim, M., &Yadav, R. *Capital structure and firm performance: Evidence from Malaysian listed companies.*Procedia-Social and Behavioral Sciences, 2012,*65*, P.156-166.

[48] Shin, H. and Soenen, L. *Efficiency of Working Capital Management and Corporate Profitability,* Financial Practice and Education, Fall/Winter, 1998, P. 37-45.

[49] Siao, W. S., and Chou, T. K.*Does Managerial Ability Improve Value of Cash Holdings?*Working paper. 2013.

[50] Tong, Z.*Firm diversification and the value of corporate cash holdings.*Journal of Corporate Finance, 2013, 17(3), P. 741-758.

[51] Van Eekelen, K., and S. Ebert.*Managerial Characteristics and Corporate Cash Holdings.Master Thesis Finance in* Tilburg School of Economics and Management.2014.

[52] Wang, J. *The Asymmetric Impacts on the Marginal Value of Cash Holdings*. Working paper.2010.