Cash Holdings and Corporate Profitability: Some Evidences form Jordan

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ABSTRACT: The purpose of this paper is to examine the effect of cash holdings level on firms' profitability. Three simple regression models were used to examine the relationships between cash holdings and firms' profitability using a panel data of 65 non-financial firms listed in Amman Stock Exchange (ASE) during the period from 2000 to 2011. The results showed a positive significant relationship between cash holdings and profitability. This means that a good financial performance of the firm is an outcome of vast corporate cash holdings. This positive relationship reflected the beliefs of Jordanian firms' managers that the absence of effective liquidity management will cause cash shortages and will result in difficulties in paying obligations, which negatively affected the firm's profitability. This study contributes to the practical world. It helps firms in the markets of emerging countries in general and in ASE in particular, manages their liquidity and cash. Furthermore, the study helps firms hold the percentage of cash, which lead to efficient financial performance. This study encourages the future researches to find out the suitable strategies related to cash holdings.

KEYWORDS: Cash Holdings, Profitability, Return on Assets (ROA), Return on Equity (ROE), Earnings per share (EPS), Amman Stock Exchange (ASE).

1   INTRODUCTION

The financial crisis (2007-2009) has returned the attention back to cash holdings and liquidity management, directing the efforts to the policies to improve the company's cash management. The first function of cash management is to secure the short term normal business activities, manage resources and enhance liquidity (Allman-Ward & Sagner, 2003). The essential objective of this practice is to reduce the percentage of liquid assets held by companies in order to fulfill their ongoing activities on one hand, and on the another hand, to achieve a sufficient level of cash holdings to empower the company to obtain trade discounts to achieve acceptable credit rating and to meet unexpected cash requirements (Brigham, Gapenski, & Daves, 2003).

Cash holdings have many advantages related directly to investment activities, especially in flexibility and capitalizing on opportunities. Firms with high cash holdings can take advantage of more investment opportunities without being too restricted by capital, ensure adequate capital for planned or unplanned opportunities (business expansion, market opportunities during the financial crisis, when unexpected news brings a stock price down, real estate deal, business opportunities, and so on) (Ogundipe, Ogundipe, & Ajao, 2012). Availability of cash holdings allows firms to take advantage of the moment. Firms can make profitable investment deals that have a huge impact on their continuity whether for restructuring purposes or for taking advantage of new opportunities. On the other hand, the cash holdings decision must be sound, thorough and logical in order to avoid the negative impact of holding too much cash (Elkinawy & Stater, 2007).

While the researches on cash holdings discussed the profitability as a determinant of cash holdings, this paper aims to investigate the outcome of holding vast cash by examining the effects of holding vast cash on firms' profitability. The paper aims to presents empirical evidences that cash holdings decision affects on corporate financial performance by using panel data of 65 non-financial firms listed in Amman Stock Exchange (ASE) during the period from 2000 to 2011.

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2   RELATED LITERATURE

The trade-off theory refers to as the negative effect of return on assets on cash holdings arguing that profitable firms have enough cash flows to avoid under-investment problems (Almeida & Campello, 2005). In contrast, **the pecking order theory** predicts the positive effect of return on assets on cash holdings (Ogundipe, Salawu, & Ogundipe, 2012).

There are few studies that addressed the effect of cash holdings decisions on the firm's profits and financial performances (Lehtinen, 2011). The relationship between liquidity and profitability was fairly discussed in the financial management. The wide perception in the classical view is that there is a negative effect of firms' liquidity on profits, and that firms holding more liquidity will not be able to exploit the profitable investment opportunities, and possibly ending up paying higher taxes on this asset (Wenyao, 2010). This negative relationship has faced a number of objections. For example, Shin and Soenen (1998) argued that an efficient company in managing its liquidity is the less the need for external funding, and higher chances of achieving profitability.

Frésard (2010) found evidence that firms holding higher cash than their competition achieve better performance and profitability when measured by return on assets. The study presented evidence that firm's market-share increased than that of their competitors as a result of increasing levels of corporate cash holdings. The firm employs effective capital management to benefit from operational competitive advantages whatever the economic climate is (Vuorikari, 2012).

The study also helps set a fundamental strategy of success in improving firm's financial performance through good managing to cash holdings within the different market conditions. Opler, Pinkowitz, Stulz, and Williamson (1999) argued that when the investment opportunities are large enough to hold larger cash, they will have a positive effect on corporate financial performance.

Related literature focused on the investors' negative views towards cash holdings and the negative effect of liquidity and cash holdings on the firms' financial performance as well. With the global financial crisis of 2007-2009, the financial markets around the world were hit by the most awful crisis since the great depression.

This crisis caused difficulties for the most firms around the world which faced severe funding problems especially the non-financial firms, which were directly forced to strengthen their financing strategies against financial constraints and transfer from indirect finance to direct finance to face this new situation (Mizen, 2008).

Investors have currently realized the advantages of cash holdings and liquid investments for the firm operations and its performance. For example, a recent article published in the Economist (2008) stated "how time changes; not long ago, companies with cash piles were assailed by corporate activists to return money to shareholders, but currently it is only a slight exaggeration to say that the more cash that investors see in a firm's coffers, the happier they are". This leads to believe that increasing of cash will lead the firm to a better competitive position especially when market trend is bearish.

Corporate cash holdings and its implications have been widely investigated in the major developed countries. On the contrary, this issue received little attention in the developing countries even though they observe the same phenomenon (Chen, 2012).

Many studies have addressed the effect cash holdings on the profitability and give varied results. For example, using a data set of US public companies, Palazzo (2011) found evidence of the cash holding effects on firms financial performance that precautionary savings motive involves a positive relation between expected return on equity and cash holdings. This positive relationship is going stronger for firms with less valued growth opportunities. Furthermore, Sur, Biswas, and Ganguly (2001) investigated the positive association between liquidity and financial performance. Shin and Soenen (1998) pointed out that efficient firm is the least necessity for external funds, the better financial performance and the well managing its working capital.

L. Pinkowitz, Stulz, and Williamson (2006) examined the determinants of the market value of cash holdings U.S. public firms over the period 1950 to 1999. Their results showed that both past and future changes of cash holding levels only contribute just a little to the market value of a firm. They also argued that the value of cash holdings increases for the firms with growth opportunities. Moreover, they demonstrated that cash holdings of corporates with constant investment opportunities and corporates forcing the risk of insolvency were less valued.

Raheman and Nasr (2007) using a sample of 94 Pakistani listed firms, found a significant negative relationship between liquid assets and profitability during the period from 1999 to 2004. On the other hand, Lyroudi and Lazaridis (2000) studied the listed companies on the London Stock Exchange for a period of four years. They found that cash conversion cycle, current ratio and the quick ratio effect on firms' profitability negatively.

Wang (2002) examined the relationship between liquidity and firm profitability as well as value for Japanese and Taiwanese listed firms in the period from 1985 to 1996. The results of the paper acknowledged the existence of a negative and significant relationship between liquidity and profitability.

The study of Allahawiah and Al Amro (2012) also concluded that liquidity holdings do not depend on debt, mostly made stronger financial position to the firms and attract many investors to invest in these firms, which was reflected positively on their stock market price.

The decision of cash holdings is one of the most significant decisions required for management (Islam, 2012). In spite of the abundant previous studies and many discussions of corporate cash holdings, the implications of firms' cash policy are not yet full- understood (Frésard, 2009). In the emerging markets, the strategic decision of cash holdings is necessary, but it has been under-researched or incompletely explored in the previous studies (Al-Najjar, 2012).

Cash holdings play a significant role in the economic growth in the emerging countries. Chen (2012) suggested that corporate cash holdings in emerging markets promote economic growth. The study attributed this relationship to firms' desire in developing countries taking advantage of investment opportunities.

Better managing of the firm liquidity is one of the main goals for any business. However, collecting cash from customers in time helps firms paying short term debts and protect the firm of technical insolvency. In contrary, the absence of right liquidity management will cause cash shortages and will result in difficulty in paying obligations which effect negatively on the firm's profitability (Vijayakumar, 2011).

A high deal in liquid assets means low corporate's profits margins and low investment earnings. That, more investment in liquid assets will not yield enough earnings, and vice versa. On the other hand, a low investment in liquid assets a high rate of return as no unused investment is tied up in current assets. However, as a result of disruption in production and sales and its bad effects on inventory, the low current ratio causes a technical insolvency represented on incapability to repay the creditors in time due to the restrictive strategy (Vishnani & Shah, 2007).

Afza and Adnan (2007) suggested that the future researches should explore the impact of corporate cash holdings on firms' profitability and performance, which is mainly related to the hedging logic of the precautionary motive, numerous literatures explored the influence of the competitive situation on corporate cash holdings policy.

The recent findings of the positive relationship between cash holdings and firm value have proved after the financial crisis by Martínez-Sola, García-Teruel, and Martínez-Solano (2013),Morellec and Schürhoff (2011), and Bates, Kahle, and Stulz (2009) among others. These literatures argued that cash holdings increase the ability on competition in financial markets.

The most common measures of profitability are return on assets, return on equity and earnings per share (Benos & Papanastasopoulos, 2007).

The weakness of corporate governance in the emerging markets decreases the shareholders' and creditors' ability to monitor cash holdings. So cash holdings expected deviate from the optimal level. In reality, poor governance corporations may waste cash holdings easily and accordingly decreases corporate profitability (Dittmar & Mahrt-Smith, 2007).

Although previous literature has recognized a significant influence of the corporate market position on the decision of capital structure, but the influence of cash holdings is far less understood (i.e., Campello, 2006; Kovenock & Phillips, 1997; MacKay & Phillips, 2005). Kalcheva and Lins (2007) indicated that firm values are always lower when controlling managers hold more cash in countries where external level of shareholder protection is weak, and are higher when controlling managers pay payouts.

Based on similar arguments, and in harmony with results of Bates et al. (2009) study, Morellec, Nikolov, and Schürhoff (2008) concluded that US corporations hold cash more than they need. This can be explained due to the rise of last decade industrial competitiveness. In that sense , Gaspar and Massa (2006) investigated the relationship between the competitive situation and corporate financial profitability and performance of the financial market. They attributed the rise of stocks idiosyncratic volatility to the growth of industrial competitiveness.

Haushalter, Klasa, and Maxwell (2007) argued that selecting the optimum corporate cash holdings takes into consideration the competitive position compared to industry rivals (i.e., market share). This is in addition to the competitive strength of their industry or the similarity of their technology. Frésard (2010) pointed out that companies held vast cash are capable to rise their market share vis-à-vis their rivals. This anticipates the key role of market share itself corporate's optimal cash holdings policy.

The firms hold vast amount of cash during crises times gain competitive advantages. When the markets in trouble, firms trying seriously to decrease their prices to gain competitive pricing. In this vein, firms with vast cash holdings can last longer with weak margins and later on gain market shares from the non-survivors of the price war. Furthermore, these firms gain more advantages that are presented in the increased bargaining power with banks and creditors (Pettit, 2011).

The increase of product market competition originates the relationship between holding vast cash and income uncertainty. This encouraged Frésard (2010) to examine the role of firms cash policies to face up predator behavior of competitors. The results ratified the key role of cash buffer in protecting companies contrary to predator behavior of rivals, while giving them a room to survive exogenous against unexpected shocks in the product market. Moreover, Bolton and Scharfstein (1990) argued that the key to success in the product markets heavily depends on corporate ability to internally finance investments.

In addition to the performance and profitability aspect, the decision of cash holdings is associated to rivalry and rapacity in product markets. The flexible firms with incapability to respond to changes in product markets can force the risk of being excluded out of the market. For example, holding vast cash can empower a firm to respond rapidly to new investments opportunities by building entry barriers and let the firm monopolizes the market in a situation where an entrant is trying to create competition (Baskin, 1987). Cash rich corporations seek to enforce the competitors who are financially constrained out of the product market by mediating their cash flow. The model of Bolton and Scharfstein (1990) showed that the company's ability to finance their activities mitigates the financial distress through generating funds internally, decreasing the rapacity risk and stimulating growth in the product markets.

According to the risk return theory which states a positive relationship between risk and return, it is expected to observe that business with high cash holdings and liquidity ratios have low risk which implies a low return and vice versa.

As an emerging market, the recent global financial crisis is affected negatively on the activities and trend of Amman stock exchange. In spite of the dramatic increase of the listing activity of public firms during the period pre-global financial crisis, the decline of the trust in the investment activity combined with the bad performance of the firm play key roles in value losses in the of public firms at ASE after 2007 (Al-khatib & Al-Horani, 2012).

According to the statistics of the Edaa (2011), the number of companies that are trading below par value (one Jordanian dinar per share) on October, 2011 reached 117 companies out of 211 companies that were traded on the stock market. The problem is that about 55 percent of the companies were only listed in Amman Stock Exchange.

The number of insolvent Jordanian firms listed in Amman Exchange for the last three years are (60) companies, and the number of companies almost stalled, and which suffered losses for two consecutive years are (15) companies. The accumulated losses often lead to a decline in shareholder's value and thus a significant drop in market prices which may cause a high risk of creditors and banks.

The indicators of insolvent economic companies appear when the firms do not cover their expenditures by using their revenue. The firms are going up to the stage of technical insolvent. In such case, the firms will not be able to repay debts on time, because of the expansion in investment in assets of non-convertible to cash.

Despite the fact that its assets exceed the value of its debt, this requires rescheduling of debt and the sale part of its assets at unfair prices, but when it goes down the value of the assets of the company to less than the value of its debt, the result of this situation and called the financial distress which need to the real liquidation of these companies as soon as possible to reduce the losses of the creditors.

Unfortunately, cases of financial distress suffered by many companies in Amman Stock Exchange (ASE) reflect the lack of sufficient knowledge to the importance of liquidity, whether by the senior management of companies or boards of management and inefficiency of liquidity management in ASE although of the impact of liquidity on the profitability. This paper aims to find out the impact of cash holdings decision in corporate cash holdings using a panel data of 65 nonfinancial firms listed in ASE during the period from 2000 to 2011

3   DATA AND METHODOLOGY

The main source of data for this paper was the financial reports of the non-financial firms having their domicile in all 232 Jordan listed firms in ASE over 12 years from 2000 to 2011. All financial collected data are in Jordan Dinar. Consistent with previous literatures, this study excludes financial firms due to their regulated environment and the dissimilarity in their financial statement structure, which eventually reduced the sample to 125 firms. Next, this study dropped all firms with missing variables, and lastly only those firms with at least twelve continuous time series observations during the sample

period were selected as a sample. All these were done to ensure consistency in the data set although it may result in survivorship bias. The final number of firms was 65.

"The analysis of financial statements is a process of evaluating the relationship between parts of financial statements to obtain a better understanding of the firm's position and performance" (Metcalf & Titard, 1976, p. 157). Financial measurements have been considered as the main approach in evaluating business performance. Growth in sales, return on assets, return on equity and earnings per share are some of the most common measures of the financial dimension (Dess Gregory & Robinson Jr, 2006). Three simple regression models were used to examine the relationships between cash holdings and firms' profitability measured by Return on Assets (ROA), Return on Equity (ROE) and Earning per Share (EPS).

4   EMPIRICAL ANALYSIS

Table 1 explores the main descriptive analysis of cash holdings outcomes which are profitability variables over the whole period of the study. It can be concluded that the Return on Assets (ROE) during the period of the study that is 3.22 percent which is relatively low. Also the Return on Equity (ROE) is very low around 3.10 percent. Moreover, Table 1 shows that (ROE) is less than (ROA) which means that owners take risks in consideration more than returns in the ASE. The Earnings per Share (EPS) also are very low that are nearly 11 cents per share, which is not satisfying.

Table 2 shows that ROA and ROE decreased after 2007 and show a negative value in 2011. EPS increased from 2000 to 2007, and then decreased to reach six cents in 2011.

Table 3 shows that cash holdings had significant positive correlations with all profitability measurements during the whole period of study. The strongest correlation was with return on assets 29.6 percent, while the weakness correlation was with economic value adder per share which is 7.5 percent.

The results of simple regression analysis have been explored in the table 4, and show a partial significant relationship between cash holdings and profitability. This means that firms' profitability is affected by the cash holdings level. In other words, profitability is an outcome of corporate cash holdings. Before adopting the models which explain the relationships between cash holdings and profitability, the study has tested the assumptions of simple linear regression models, which is required to be achieved in order to ensure the strength of the model and avoids bias. As mentioned earlier, the outliers problems of the dependent variables ROA, ROE and EPS were addressed by ignoring them, using the conditions if -7.8 percent <ROA <16 percent, if -9.8 percent <ROE<22.2 percent and if -0.2JD < EPS <0.29JD. The residuals of the modeles were found to normally distributed, as seen in figure 1.

The fixed effect model has been used to estimate linear equation of the relationship between cash holdings and profitability as Hausman test suggested (see Table 4). Table 5 shows a positive significant relationship between cash holdings and profitability measurements ROA, ROE, and EPS at one percent significance level. This means that ROA, ROE, and EPS increased in firms which hold vast cash. In other words, the positive performance represented in ROA, ROE and EPS is an outcome of holding vast cash and vice versa. Table 5 also shows that F statistic is significant at one percent significance level, as the corresponding p value of F test is zero. Therefore, the independent variable, which is cash holdings, influences firm's performance, which is a good sign for the model. Moreover, the R- Squared for the relationships between cash holdings and ROA, ROE and EPS are 0.44 0.408, and 0.4811 respectively, which means that the independent variable explains 44 percent, 40.8 percent and 48.11 percent from the ROA, ROE and EPS changes respectively.

5   CONCLUSION

This study focuses on cash holdings decisions and their significant role in enhancing the financial performance of firms and ensuring the required funds in time. The results of simple regression analysis have been explored in the table 5 are contrast with the risk return theory; which states a direct relationship between risk and return, according to this theory is expected to observe a negative relationship between liquidity and risk which implies a negative relationship between liquidity and profitability. The results of this paper show a positive partial significant relationship between cash holdings and profitability. This means that firms' profitability is affected positively by cash holdings level. In other words, a good corporate profitability is an outcome of holding vast cash.

The positive relationship between cash holdings and profitability reflect the effectiveness of hedging behaviors by Jordanian firms' managers that such strategies help Jordanian listed firms avoiding the cash shortages and easily paying obligations which positively affected on the firm's profitability. Moreover, these results imply that the disruption in production and sales effects on inventory and causes a technical insolvency represented on inability to pay the creditors in time due to the restrictive policy. Finally, the results of this paper are expected to help investors and firms' managers to

understand the effects of cash holdings on profitability and take the right decisions insured the ongoing good performance of the firm. The previous relationship, supported by each explanatory measurements of profitability used in this study, except growth of market share, suggests that a cash buffer is only to protect firms against predator behavior of competitors, while giving them a room to survive exogenous against shocks in the product market. These results go in line with the results of Martínez-Sola et al. (2013), Morellec and Schürhoff (2011), and Bates et al. (2009) among others, which argued that cash holdings increase the ability on competition in financial markets. Also, it goes in line with the study of Mikkelson and Partch (2003) which concludes that hold vast cash support investment without hindering corporate performance.

The results of Abuhommous (2013), which found that non-financial Jordanian firms listed in ASE are financially constrained, strongly justified the results of this study that proved the positive relationship between cash holdings and financial performance. Therefore, cash holdings decisions depend on various frictions that financially constrain a firm; this is because financially constrained firms do not enjoy unrestricted access to external capital markets. Thus, financially constrained firms tend to hold vast cash from current cash inflows in order to increase the likelihood of funding investment opportunities. In this vein, cash holdings management becomes a strategic issue for financially constrained firms that strive to maintain optimal cash holdings that balance the profitability of current and future investments. This study contributes to the practical world. It helps firms in the markets of emerging countries in general and in ASE in particular, manages their liquidity and cash. Furthermore, the study helps firms hold the percentage of cash, which lead to efficient financial performance. Moreover, the study recommends that future research to deliver empirical justifications beyond not affecting cash holdings by inflation and cash surplus. Additionally, the study recommends that future research focuses on the impact of cash holdings on the value of firm. The positive relationship between cash holdings and financial performance in ASE during the period from 2000 to 2011 encourages finding out the suitable strategies related to cash holdings in future research.

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APPENDIX

Table 1. Descriptive analysis of profitability variables

	ROA	ROE	EPS
Mean	3.23	3.11	0.11
Median	3.99	5.77	0.07
Maximum	43.94	58.05	3.74
Minimum	-58.67	-162.03	-1.06
Std. Dev.	8.99	18.34	0.36
Skewness	-1.17	-3.71	5.06
Kurtosis	9.97	27.72	43.80
Jarque-Bera	1753.67	21657.70	57297.20
Probability	0.00	0.00	0.00

Note. These variables are; return on assets (ROA) which is net profit after taxes to total assets, return on equity (ROE) which is earnings before tax, depreciation and amortization to stockholder's equity, earnings per share (EPS) which is net profit after taxes to number of shares.

Table 2. Annually descriptive analysis of profitability variables

		ROA	ROE	EPS	ROE
2000	Mean	2.41	2.40	0.07	2.49
	Std.	7.92	14.40	0.24	14.43
2001	Mean	2.45	3.15	0.08	3.25
	Std.	9.32	13.09	0.19	13.14
2002	Mean	3.56	4.25	0.09	4.37
	Std.	6.82	9.64	0.18	9.73
2003	Mean	3.18	2.40	0.09	2.53
	Std.	8.20	22.14	0.21	22.21
2004	Mean	5.07	5.43	0.14	5.54
	Std.	7.13	14.66	0.23	14.71
2005	Mean	6.25	7.14	0.18	8.74
	Std.	8.42	12.19	0.32	11.82
2006	Mean	3.70	3.51	0.10	5.33
	Std.	6.70	11.74	0.18	11.51
2007	Mean	5.36	5.81	0.21	7.71
	Std.	9.60	17.25	0.49	17.20
2008	Mean	2.54	-2.51	0.13	0.15
	Std.	12.96	30.59	0.65	28.10
2009	Mean	3.04	0.56	0.09	3.28
	Std.	8.25	15.28	0.29	14.09
2010	Mean	1.56	-2.00	0.08	0.58
	Std.	8.95	17.88	0.34	15.67
2011	Mean	-0.75	-10.29	0.06	-6.71
	Std.	10.50	36.08	0.54	30.45

Note. These variables are; return on assets (ROA) which is net profit after taxes to total assets, return on equity (ROE) which is earnings before tax, depreciation and amortization to stockholder's equity, earnings per share (EPS) which is net profit after taxes to number of shares.

Table 3. Correlation matrix between cash holdings and profitability variables

Probability	LOGCASH	ROA	ROE	EPS
LOGCASH	1.00			
ROA	0.304*	1.00		
ROE	0.218*	0.828*	1.00	
EPS	0.205*	0.648*	0.551*	1.00

*Note: *P < 0.01   **P < 0.05 and   ***P < 0.10*

Note, the variables in this table are; cash holdings (LOGCASH) the natural logarithm of cash and cash equivalents to net assets, return on assets (ROA) which is net profit after taxes to total assets, return on equity (ROE) which is earnings before tax, depreciation and amortization to stockholder's equity, earnings per share (EPS) which is net profit after taxes to number of shares.
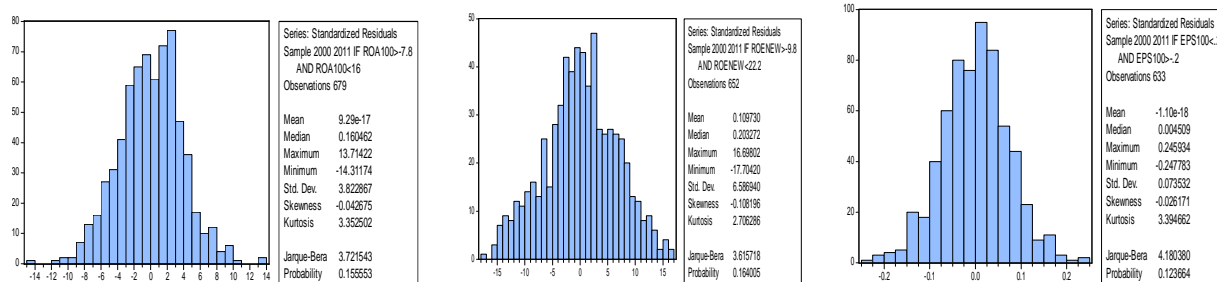

Figure 1 the Residuals Normal Distribution (ROA), (ROE) (EPS)

Table 4. Hausman Test (ROA), (ROE) and (EPS)

Correlated Random Effects - Hausman Test Test cross-section random effects		
Test Summary	**Chi-Sq. Statistic**	**Chi-Sq. d.f.**
Cross-section random (ROA)	6.867797	1*
Cross-section random (ROE)	4.337958	1**
Cross-section random (EPS)	5.004541	1**

*Note: *P < 0.01   **P < 0.05 and   ***P < 0.10*

Table 5. The Relationship between Cash Holdings and Profitability

No.	Variable	OLS1 Coefficient	OLS2 Coefficient	OLS3 Coefficient
1.	LOGCASH	0.423817*	0.510547*	0.007508*
2.	C	5.698319*	8.178252*	0.083522*
	R-squared	0.44	0.408	0.4611
	Adjusted R-squared	0.38	0.342	0.399
	Durbin-Watson stat	1.26	1.324	1.352
	F-statistic	7.427*	6.206*	7.463*

Note: *P < 0.01   **P < 0.05 and   ***P < 0.10

| Dependent Variable: ROA | Dependent Variable: ROE | Dependent Variable: EPS |

Note. Dependent Variables in this table is return on assets (ROA) which is net profit after taxes to total assets, return on equity (ROE) which is earnings before tax, depreciation and amortization to stockholder's equity, earnings per share (EPS) which is net profit after taxes to number of shares, while the independent variable is cash holdings (LOGCASH) the natural logarithm of cash and cash equivalents to net assets.