Factors Affecting Corporate

Cash Holding of Non-Financial Firms in Pakistan

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Abstract: The previous researches explore the question of why firms hold cash. But there are few researches done in developing countries like Pakistan. The need for cash is characterized by its policies of firms regarding capital structure, working capital requirements, cash flow management, dividend payments, and asset management. In this paper, the impact of these factors is normally analyzed under the framework of Tradeoff theory, Pecking Order Theory and Free Cash Flow Theory. This paper focuses on determining the level of corporate cash holdings of non-financial Pakistani firms, and cash holding requirement among different industries. The data is set for period of 2008-2012 by using the data of 40companies and 6 industries. The findings of the study support the theories. Which show that firm size, net working capital, leverage, Capital Expenditure and Dividend significantly affect the cash holdings of non-financial firms in Pakistan.

Keywords: cash holding; net working capital; Firm Size; leverage; Capital Expenditure; Dividend

JEL Classification: G3

1. Introduction

This paper examines the determinants of corporate cash holdings in context of Pakistan. Financial managers need cash to pay for labor and raw materials, to buy fixed assets, to pay dividend and many other day to day business activities. Since cash do not itself earn any interest so business need to hold for taking trade discounts (by paying early), maintain credit rating and to meet other profitable activities. Under the perfect market there are no incentives for the firm to hold cash, if firm want to invest it can find the fund in the market at a cost which is the function of its risk and profitability of project. But under the imperfect market the

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internal and external funds are no longer in perfect substitutes so many theoretical factors enlighten the motives for corporate cash holdings. The transaction costs assume to be the major determinants of cash levels and firms with the higher marginal cost for cash were expected to hold more cash.

The basic question regarding cash holding is to know the consequences of cash holding. Do the firm capital expenditure effect on holding cash decision. So it is the important factors to determine that what factors motivate managerial cash holding in decision? What value do shareholders place on the cash that firms hold, and how does that value differ across firms? When manager try to hold cash do they really care about shareholders wealth or about their personal well-being as well? What are the major factors that affect the manager decision for holding cash? Is there any difference between cash holding among different industries?

The three theoretical models provide guidance regarding determinants of cash holding. Firstly the trade of model hypothesis focuses on marginal cost and marginal benefit of holding cash. Secondly the pecking order theory of Myers and Majluf suggest that firm used cash on requirement of retained earnings and investment needs. Finally Jensen's free cash flow or agency cost which view that manager have incentives to hold cash to increase the amount of assets under their control.

2. Literature Review

Olpher, Pinkowitz, Stulz and Willaimson (1999) were the first to thoroughly investigate the determinants of corporate cash holdings. They consider two broad focuses of holding cash first the trade off theory which focuses on cost and benefit of holding cash and the other one is financing hierarchy theory which states that level of cash holdings depend on profitability. They find that firms with strong growth opportunities, higher business risk and smaller size hold more cash. On the other hand large firm and high credit-rating firms tend to hold less cash. However they find little evidence that suggest managerial entrenchment as a motive for holding cash.

Nicolas Couderc (2004) In their research the data taken from Canada, France, Great Britain, and USA. They focus on the link between cash holdings and firms' profitability, by implementing a bivariate profit model. A negative correlation is drawn between these two variables; a firm with more cash is likely to perform worse than other firms. Cash holdings are increasing on firm's size, cash flow level, cash flow variability, and decreasing on indebtedness, investment rate, and liquidity of the balance sheet.

Hofmann (2006) examined the determinants of corporate cash holdings of non-financial firms in New Zealand. His findings suggest that the main determinants of

corporate cash holdings in New Zealand are firm's growth opportunities, the variability of its cash flows, leverage, dividend payments, and the availability of liquid asset substitutes. While growth opportunities and the variability of cash flows are positively related to cash holdings, large dividend payments and liquid asset substitutes indicate lower cash holdings.

Habib and Amin (2006) conducted the research corporate cash holding in the context of Bangladesh. Their research based on the tradeoff theory, pecking order theory and free cash flow theory. Their research finds many evidence regarding trade-off and pecking order theory. However no support is found for the free cash flow theory. The variables in the research are dividend payment, investment opportunity, liquid asset substitutes, leverage, size, cash flow uncertainty, debt maturity, inside ownership. Mean, Median, S.D, Correlation, Univariated, Regression are the method used in their research. Their result shows that liquid asset substitutes and leverage are negatively related to corporate cash holdings. While dividend paying and firm with larger cash flow holds more cash.

Afza and Adnan (2006) conducted a research in Pakistan their focuses is on tradeoff model, pecking order theory and free cash flow theory. The data collected from KSE from 1998-2005 The findings of the study shows that firm size, cash flow, cash flow uncertainty, net working capital, and leverage significantly affect the cash holdings of non-financial firms in Pakistan. They use cash, size, MTB, NWC, Leverage, Dividend as variable. They have applied mean, median, standard deviation, t-test, Beta approaches. Their result support pecking order theory free cash flow and trade off model.

Faulkender and Wang (2006) focus on the cross-sectional variation in the marginal value of corporate cash holdings that arise from differences in corporate financial policy. The variables include Firm size, Long-term bond rating, and Commercial paper rating while the approaches used are Payout ratio and regression approaches. They find that the marginal value of cash declines with larger cash holdings, firms with stronger growth opportunities, riskier cash flows, and more limited access to capital markets hold higher cash balances.

3. Methodology

To determine the variables that affect the managerial cash holding decision in the context of Pakistan following regression is used

$$CASH = \beta_0 + \beta_1 SIZE_i + \beta_2 NWC_i + \beta_3 LEVERAGE + \beta_4 CAPEX + \beta_5 DIVDEND$$

Where, variables are represented by

$$CASH = \frac{\text{Cash and cash equivalents}}{\text{Net Assets}}$$

$$SIZE = \text{Natural logarithm of Total Assets}$$

$$NWC = \frac{\text{Current assets – Current Liabilities}}{\text{Net assets}}$$

$$LEVERAGE = \frac{\text{Total Debt}}{\text{Total assets}}$$

$$CAPEX = \frac{\text{(Current Fixed Assets – Previous Fixed Assets) + Deprecation}}{\text{Net Assets}}$$

3.1. Variables

The variables that are used in research include cash as a dependent variable while dividend, leverage, size, networking capital and capex are independent variables.

Cash

The dependent variable is cash and it is the sum of cash in hand and bank and marketable securities divided by net assets.

Net Working Capital

The net working capital is also the major factor that affects the holding of cash for the firm. NWC is current asset minus current liabilities divided by net assets.

Size

Size is another significant variable that affects cash holdings. According to trade-off theory raising funds is less expensive for larger firms they are expected to hold less cash. The pecking order theory suggests that larger firms are more successful hence they should have more cash after controlling their investments. Size is the natural logarithm of total assets.

Leverage

According to trade-off theory leverage increase the probability of bankruptcy firm with the higher leverage are expected to hold more cash. On the other hand to extend that leverage ratio acts as a proxy for the ability of the firm to issue debt it would be expected that firms with higher leverage would hold less cash. The pecking order theory tells that debt grows when investment exceeds retained earnings and falls when investment is less than retained earnings. The previous researches show a negative relationship between leverage and cash holdings. The agency cost theory tells that highly leverage firms are suggest to capital market

scrutiny, manager discretion to destroy value through cash accumulation is less likely for higher levered firms. Leverage is total debt divided by total assets.

Capital Expenditure

The capital expenditure means the investment made by the firm in their assets for the certain period. The researches show that theories having more capital expenditure hold more cash. The CAPEX is defined as net fixed asset of current year minus net fixed asset of previous year plus depreciation and divided by net assets

Dividend

According to Trade-off theory the firm that currently pays dividend can raise additional fund by cutting dividend instead of going to the market, hence dividend payer are expected to hold less cash. Dividend is basically taking the value of one company if a company pays dividend in a year otherwise take it zeros.

3.2. Hypothesis

The conclusions from previous researches shows that firm size, growth opportunities, cash flows, leverage, dividend and the probability of financial distress impact cash holdings. The hypothesis that was developed is on the basis of theoretical models. Following are the hypothesis that we use in this research

Hypothesis 1a: Cash holdings are positively related to firm size.
Hypothesis 1b: Cash holdings are negatively related to firm size.

Hypothesis 2a: Cash holdings are negatively related to the leverage.
Hypothesis 2b: Cash holdings are positively related to the leverage.

Hypothesis 3a: Cash holdings are positively related to CAPEX
Hypothesis 3a: Cash holdings are negatively related to CAPEX

Hypothesis 4a: Cash holdings are positively related to dividend payments.
Hypothesis 4b: Cash holdings are negatively related to dividend payments.

Hypothesis 5a: Cash holdings are positively related to Net Working Capital.
Hypothesis 5b: Cash holdings are negatively related to Net Working Capital.
3.3 Sample and Descriptive Statistic

A sample of 40 public limited companies listed at Karachi Stock Exchange (KSE) is selected over a period of five years (2008-2012). The required data had been taken from the firms' websites. Financial firms have been excluded from the sample for the obvious reason that the factors determining their cash requirements are altogether different from the non-financial firms. The variables used to evaluate

the cash holdings of the firms in this research include size of the firm, cash flow, capex, leverage, and dividend payments. Table 1 presents descriptive statistics of the variables. The table 2 describes the significant level, standard error and beta of the variables. Table 3 presents the dependence level of the independent variable on dependent variables. Table 4 shows the multiple correlations between the dependent variable. Table 4 presents the relationships between the variables. Table 5 shows the industry wise analysis.

4. Results

Table 1. Descriptive Statistics

Variables	Mean	Std. Deviation	N
CASH	.0799	.0990	200
NWC	.1654	.1858	200
SIZE	6.6810	.5742	200
LEVERAGE	.1367	.1632	200
CAPEX	.0383	.3377	200
DIVIDEND	.9100	.2869	200

The table 1 descriptive statistic shows the mean and standard deviation of the variables and provides the general over view of the data. The mean cash ratio over the sample is 7.99% which is considerably fine for the non-financial firms. While the cash ratio in US firms' 17% reported by Opler et al European firms' cash ratio is 14.8% reported by Ferreira and Vilela. Its standard deviation show that on the average each value lie at the distance of 0.099 units from the center part of the data and the total number of observation (N) are 200. The leverage ratio 13.6% show that Pakistani firms use lesser amount of debt to finance their assets as compared to developed countries (26.1% in US firms and 24.8% in European Countries)

Table 2. T-Test Analysis

Variables	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	-.166	.081		-2.051	.042
NWC	-.128	.036	-.240	-3.570	.000
SIZE	.029	.012	.171	2.526	.012
LEVERAGE	-.120	.041	-.198	-2.918	.004
CAPEX	-.042	.019	-.144	-2.179	.031
DIVIDEND	.050	.023	.146	2.237	.026

The table 2 describes the significant level, standard error, T value and beta of the variables. Here B are the slope coefficients that indicates that if we increase one unit change in the independent variable (NWC) then dependent variable will change -0.128 unit. Standard error represents on average each value lies at a distance of 0.036.

T is the test statistics value and it is calculated as T= B/Std Error

The last column indicates whether the variables are playing any significant role in change in Dependent variable or not if value of any variable is less than 0.05 then it's playing significant role otherwise they are not playing any significant role. In the table the variables are significant means playing significant role in the change of dependent variable this result is according to previous researches.

The NWC is negatively and significantly related to cash is consistence with trade off theory of cash holdings which predicts that firms with more liquid assets other than cash should hold less cash as these assets can be used as cash substitutes. The Size is positive and significant related to cash follow the pecking order theory which reveal that large firm hold more cash while this result contrast to trade off theory which predicts that raising fund is relatively less expensive for larger firms they are expected to hold less cash. The leverage is negatively and significantly related to cash, trade off, pecking order and agency cost theory of cash holding all predict a negative relation. Trade off theory suggest that leverage ratio acts as a proxy for the ability of the firm to issue debt it would be expected that firms with higher leverage would hold less cash. The pecking order theory tells that debt grows when investment exceeds retained earnings and falls when investment is less than retained earnings.

The agency cost theory tells that highly leverage firms are suggest to capital market scrutiny, manager discretion to destroy value through cash accumulation is less likely for higher levered firms. The Capex is negatively and significantly related to

cash which reveal the high capital expenditure firm has less cash holding. The Dividend is positively and significantly.

Table 3. R Square Analysis

R	R Square	Adjusted R Square	Std. Error of the Estimate
.425	.181	.159	.091

The table show the multiple correlations between the dependent variable is 0.425 which is not too much high correlation but it is positive correlation. R square indicates that in the dependent variable variation due to independent variables (DIVIDEND, SIZE, CAPEX, NWC, and LEVERAGE) is 18% and remaining 82% is due to independent variables which is not included in the regression model. Adjusted R square indicated that 16 % variables variation is in the dependent variables if we take into account the all the regression coefficients and then due to single variable there will be 16 % change will be in the dependent variable. Standard error indicated that on the average each value at the distance of 0.091for the estimated regression line.

Table 4. Correlation

VARIABLE	CASH	NWC	SIZE	LEVERAGE	CAPEX	DIVIDEND
CASH						
NWC	.268					
SIZE	.105	-.164				
LEVERAGE	-.230	-.201	.209			
CAPEX	-.188	-.021	-.117	.090		
DIVIDEND	.176	.092	-.011	-.041	-.013	

The above table 4 is about the correlation about the two variables now if we see the correlation between CASH and NWC it is 0.268 so there is positive correlation as sign of the value is positive. And as the one variable (CASH) is increasing or decreasing the other variable (NWC) is increasing or decreasing. As the value of correlation value is near to 1 or -1 it means it is highly correlated and the positive or negative sign indicates whether the two variables are moving in the same direction (positive correlation) or on the opposite direction (negative correlation). There found to be a positive relationship of Cash with NWC, Size and Dividend. There is a negative relationship of Cash with Leverage and Capex. The NWC have positive relation with dividend while it has a negative relation with size, leverage and capex.

5. Conclusion

The corporate cash holding is determined by three theoretical models trade off model which describe that firms hold cash by weighing the marginal cost and marginal benefits. The pecking order theory suggests that cash is used as buffer between retained earnings and investment needs. The free cash flow view that managers have incentive to hold cash to increase the amount of assets under their control. The empirical research in developed country supports these models, but there is less information available about determinant of cash holding in developing countries. The overall result indicates that all the variables in the model are significant in defining the cash levels of Pakistani firms. Firm size, is positively associated with the cash levels of the firm. This result indicates that larger firms hold more cash, this result support the pecking order pattern of financing the investments. Leverage is found be negatively related to corporate cash holdings this result supports trade-off theory, pecking order theory and agency cost theory. Nwc is positively related to cash which show that if firm's requirement for nwc is more it would hold more cash. While capex is found to be negatively related to cash holding reveal that firm having more cash holding would have less cash holdings. The positive relation of dividend with cash holding shows that dividend payers are expected to hold more cash and this result if against the tradeoff theory, the reason for this in case of Pakistani firms is that the firms not pay dividend of regular basis.

The industry analysis shows that every industry in Pakistani context has different need for holding cash. The industries cash holding depend differently on independent variable i.e. nwc, leverage, size, capex and dividend. The future researches should explore the impact of corporate cash holdings by including other independent variable by including different industries and also explore the effect of cash holding on firm's performance.

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