Determinants of Corporate Liquidity in Pakistan Incorporating the Role of Future Expectations and Coincident Macroeconomic Indicators

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Abstract: This study targets on the relationship between various coincident macroeconomic indicators and cash holdings of firms in Pakistan economy. Panel fixed-effect least square regression model has been used by employing annual data of 264 nonfinancial KSE listed firms of Pakistan, gathered for the period of eight years 2006-2013. Using the framework of trade-off, precautionary motive and pecking-order theory, the findings revealed that cash flow advantage and size of the firm are the significant determinants of corporate liquidity in Pakistan. All coincident macroeconomic variables that comprise of credit spread, economic growth rate, government budget deficit, short-term interest rates, private credit and inflation have shown persistent significant impact on corporate liquidity in Pakistan economy. Moreover, the major contribution of this study is the incorporation the role of future expectations about macroeconomic conditions in economy as well and the results prove that these are also play a vital role in determining the cash holdings of Pakistan firms.

Keywords: Corporate Liquidity; Cash Holdings; Trade-off Theory; Pecking Order Theory; Precautionary Motive; Firm Specific Variables.
JEL Classification: H62, E43, E31, E41, G33.

1. Introduction

The macroeconomic settings in which firms operate influence their performances, decisions, policies, strategies and financial standings. Managing optimal amount of cash holdings is one of the important financing decisions of the firms as it represents their ability to timely pay off their liabilities such as debt. The macroeconomic conditions also known as coincident indicators of the economy i.e. inflation, GDP growth, financial interest rates, investment and unemployment differ from country to country and affect the performance of a nation

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accordingly. Firms don't operate in isolation and they are constituent of macroeconomic environment of any country. The firm specific determinants of corporate liquidity derived from one economy cannot be generalized without paying heed to all the other factors that have tendency to impact cash holdings. Hence, cash holdings are greatly influenced by the prevailing macroeconomic conditions. For instance, firms are motivated to save cash to take advantage of opportunity to invest when economy is growing. Whereas, when economic uncertainty is higher, firms' managers are inclined to save more cash as a cushion because of uncertainty in future cash flows and these firms have poor access to capital markets. Correspondingly, if managers predict high inflation in future, then they will hold less cash because of opportunity cost associated with it. Likewise, if the managers anticipate rise in interest rates, then it will be beneficial for them to utilize cash reserves in opportunities that are expected to give higher return in future.

As most of the developing countries are characterized by high inflation, low economic growth rate, higher government budget deficit, immature capital markets and other economic difficulties. These macroeconomic conditions actually erode firm's earnings or cash flows. Therefore, it is vital for firms to explore that which factor out of these has significant impact on corporate liquidity. The previous researches that determined corporate liquidity mostly emphasized on the underlying theories such as free cash flow theory, pecking order theory and trade-off theory as well as motives of cash holdings (transaction motive, precautionary motive, agency motive). But, the recent studies show the significant influence of macroeconomic conditions on corporate liquidity and they urged to include these factors as important determinant of firms' liquidity. However, the impact of macroeconomic conditions on cash holdings of corporate sector of Pakistan economy has not been previously studied and if few determinants have been identified then those were firm specific. Therefore this research objectivize to find whether the coincident macroeconomic conditions of Pakistan also affect the corporate liquidity in banking sector not and if it affects then in which direction

and magnitude. This analysis can be helpful for managers of the firms to take into account the expected impact of these macroeconomic conditions while taking decision related to liquidity management. This is because of the reason that liquidity is an important corporate decision, and useful implications regarding how to maintain liquidity optimally can be provided for firms operating in today's macroeconomic environment. So the influence of macroeconomic environment cannot be overlooked while examining the factors that impact cash holdings. The rationale behind this research is to fill the gap of liquidity researches in Pakistan by examining the role of these coincident macroeconomic factors in determining the corporate cash holdings in Pakistan economy.

2. Literature Review

This section summarize the works done in past showing the determinants of corporate liquidity in various times and regions.

Keynes (1936) explained the speculative motive of money demand theory with changes in interest rates and claims that expected return to non-interest bearing cash and interest bearing cash affect the liquidity decision. If interest rates are low, firms should hold non-interest bearing cash only while interest bearing cash must only be held in case of high interest rates. Therefore, the theory shows that non-interest bearing cash is negatively affected by interest rates. Another important consideration here is that when interest rate increases, external financing also becomes expensive so, it implies that firms hold more cash in such case because internal funding is cheaper. Hence, the relationship of interest rate with cash holding will become positive. The net impact of interest rates depends upon which of the factor has overwhelming effect on cash holdings**.**

Natke (2001) collected a panel data of Brazilian manufacturing companies for the period of four years and investigated the impact of inflation on corporate demand for liquid assets. The author found that in controlled inflation environment, interest rates have significant

impact on corporate demand for liquidity. The findings conclude that firms reduce liquid asset holding when inflation is higher.

Baum et al. (2006) examined the hypothesis that macroeconomic uncertainty has negative impact on corporate cash holdings. The dataset of 4125 non-financial firms of US from period 1970 to 2000 is collected. Using a GARCH model, they established that uncertainty has negative impact on the cash holdings of the firms.

Chen and Mahajan (2010) investigated the influence of macroeconomic variables on cash holdings of firms from 34 different countries for the period from 1994 to 2005. Using fixed effect panel model, the findings confirm that cash holdings of firms are influenced by the macroeconomic variables like short term interest rates, GDP growth, inflation, credit spread, government budget deficit, rate of corporate tax and private credit. Furthermore, the authors found evidence that macroeconomic conditions also indirectly affect the cash holdings because firms' characteristics that influence corporate liquidity are also influenced by macroeconomic variables.

Chen and Yo (2012) asserted that there is a relationship between government deficit and corporate liquidity. For research purpose, firm specific quarterly financial data and macroeconomic data from 1989Q1 to 2009Q3 was gathered. Using fixed effect panel model the results indicated that corporate liquidity is negatively linked with government deficit, inflation and short-term interest rates and positively related to economic growth, credit spread and private credit.

Acharya et al. (2012) were interested to observe the nature of relationship between credit risk of non-financial US firms and their cash holding patterns in the light of precautionary motive. The results of the study indicated that firms with high default risk hold more cash as a safeguard against credit risk comparatively that is consistent with precautionary motive.

Abushammala and Sulaiman (2014) examined the influence of macroeconomic factors on cash holdings of 65 Jordanian firms by collecting a yearly panel data for the period of 2000 to 2011. With the help of OLS technique, the results showed that among all macroeconomic variables, GDP and credit spread have positive while government deficit is negatively linked with cash holdings.

Shabir et al. (2016) made an effort recently to work upon the determinants of cash holding in Pakistan for non-financial firms and found that firm size, cash flows and growth opportunities have positive effect on corporate cash holding. Even though leverage and liquidity has negative impact confirming the prevalence of both pecking order and trade off theory in determining the factors affecting corporate liquidity.

In summary, the previous studies indicate that the macroeconomic conditions have imperative role in determining the cash holdings of firms. The macroeconomic variables that significantly influence on corporate liquidity i.e. inflation, real short term interest rates, economic growth rate, private credit, government budget deficit and credit spread.

3. Data and Methodology

3.1 Variables and Data Sources

The annual data for firm specific variables is gathered from the report issued by the State Bank of Pakistan (SBP) on financial statement analysis of KSE listed non-financial firms while the data for macroeconomic variables is obtained from World Bank database (WDI). The time span for the study is of 8 years from 2006 to 2013. The description of the variables is given below in Table 1.

Table 1: Description of the Variables

Variables	Definition
Corporate Liquidity (cash holdings)	This variable is a proxy for the cash ratio. It is calculated as natural logarithm of cash and its equivalents divided by net assets.

	Cash and its equivalents include cash, bank balances and marketable securities.
Firm specific Variables	
Size	It is measured by Natural logarithm of total assets. By using logarithm, the differences of size between firms have become smaller.
Cash flow (CF)	It is a proxy that measures firm's profitability and it is calculated as CF = (profit after deduction of tax + Depreciation) divided by Net assets
Net working Capital (NWC)	It is a proxy for liquid asset substitutes and is calculated as NWC = (Current assets – Cash and cash equivalents) divided by Net assets
Leverage (LVG)	It is a substitute for cash as an alternative financing source and it is measured as LVRG = Total Debt divided by net assets
Capital expenditure (CAPEX)	It is used as a proxy for investment and growth opportunities and it is measured as additions to fixed assets divided by net assets.
Coincident Macroeconomic Indicators	
Gross domestic Product (GDP)	It is a proxy used for economic growth rate is measured as percentage change in GDP.
Government deficit (deficit)	It is a proxy used for economic uncertainty and downfall is calculated by dividing government budget deficit to GDP.
Credit spread (CS)	It is a proxy used for credit risk and transaction cost is calculated as lending rate minus risk free rate (Treasury bill rate).
Inflation rate (INF)	It is a proxy for purchasing power is calculated by taking the percentage change in consumer price index.

Private credit (PC)	It is a proxy for depth of debt market calculated as ratio of funds provided to private sector by banks divided by GDP.
Real short term interest rates (IR)	Banks borrow from SBP at overnight basis at these SBP reverse repo rates. This rate is also called discount or policy rate.

3.2 Methodology

Fixed-effect panel model has been used for estimation purpose. In order to select the static panel data model for the study, the Hausman specification test will be carried out to choose between fixed-effect and random-effect panel model.

The model is as follow:

$$\ln Cash_{kt} = \alpha + \sum \lambda_f X_{kft} + \sum \lambda_m Y_{kmt} + \mu_{kt} \quad \ldots \ldots \ldots (1)$$

Where,

$lnCash_{kt}$ represents the natural logarithm of ratio of cash and its equivalents to net assets.

X_{kft} represents the f_{th} firm specific variable of cash holdings for firm k at time t.

Y_{kmt} represents the m_{th} macroeconomic variable for firm k at time t.

u_{kt} shows an error term.

X= firm specific variables (size, leverage, net working capital, cash flow, capital expenditure).

$$\sum \lambda_f X_{ift} = \beta_1 Size_{i,t} + \beta_2 LVG_{i,t} + \beta_3 NWC_{i,t} + \beta_4 CF_{i,t} + \beta_5 CAPEX_{i,t} \ldots \ldots \ldots (2)$$

Where,

Y= (inflation, credit spread, private credit, deficit, short term interest rates, economic growth rate)

$$\sum \lambda_m Y_{imt} = \beta_6 INF_{i,t} + \beta_7 CS_{i,t} + \beta_8 PC_{i,t} + \beta_9 Deficit_{i,t} + \beta_{10} IR_{i,t} + \beta_{11} GDP_{i,t} \dots (3)$$

3.3 Expected Direction of Relationship of Coincident Macroeconomic Variables with Corporate Liquidity

3.3.1 Inflation and Cash Holdings

When there is higher inflation, keeping cash becomes costly for firms. Therefore, management should reduce the non-interest bearing cash. Firms can also increase interest-bearing cash equivalents, when inflation is increasing because interest rates go up with inflation. Hence, Inflation should have a negative influence on cash holdings.

3.3.2 Economic growth and cash holdings

According to the theories of economic booming, GDP is an indicator of economic growth and it shows a positive increase, then firms' management should hold more cash to have sufficient funds to reap benefit of profitable growth opportunities ensuing from a higher GDP growth. This shows that GDP growth rate is positively related to corporate liquidity. On the other hand, higher economic growth means firms have higher number of investment options with high returns so holding cash bears opportunity cost of not investing in assets that yields greater return. In this case, corporate liquidity is negatively related to economic growth. Therefore, the overall impact depends upon which of the force has overpowering influence on corporate liquidity.

3.3.3 Government Deficit and Cash Holdings

Government budget deficit has a tendency to affect other macroeconomic conditions. When government budget deficit is higher, then government will borrow to finance deficit by issuing debt at lower price and offers higher interest rate that results in crowding out the private investment. Due to this, the cash holdings of firms will decline as opportunity costs of holding cash increases. Higher government

budget deficit can negatively affect economic growth, so firms must reduce cash holdings as the need of cash to invest in profitable projects decreases.

3.3.4 Credit Spread and Cash Holdings

Credit spread is used as a proxy for credit risk and transaction cost (the cost of buying credit). It is expected to have a positive relationship with corporate liquidity. The reason is firms hold more cash when markets are illiquid because of higher transaction cost. In addition, in the light of precautionary motive, riskier firms hold more cash reserves and have higher credit spreads because of difficulty in debt financing.

3.3.5 Private Credit and Cash Holdings

Chen and Mahajan (2010) found that private credit could also influence cash holdings of firms because, if the borrowing from banks is easy then there is no or less need to hold cash by firms. On the opposite side, with the increase in private credit, the risk of financial distress also increases resulting in better management of cash by firms. In this situation, firms hold more cash as a buffer against the higher default risk. Therefore, the net impact of private credit on cash holdings is not clear and it depend upon the effect that are overpowers the other.

3.3.6 Short term Interest rates and cash holdings

If interest rates are low, firms should hold non-interest bearing cash only whereas interest-bearing cash must only be held in case of high interest rates. Hence, this shows that non-interest bearing cash is negatively affected by interest rates (Keynes, 1936).

4. Results Estimation

The first step was to run a test, which could decide the right choice of model. For this purpose, Hausman test was employed and results are given below. The test result indicated that the p-value is significant (<0.05) and the null hypothesis has been strongly rejected, thus fixed-effect model is more appropriate than random-effect model.

Table 2: Hausman Test

Correlated Random effects-Hausman Test				
Test cross-section random effects				
Test Summary		Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random		226.5148	5	0.0000
Cross-section random effects test comparison:				
Variable	Fixed	Random	Var (Diff.)	Prob.
CF	1.1665	1.6584	0.0018	0.0000
LVG	0.8750	0.7392	0.0066	0.0955
NWC	-0.0076	-0.0580	0.0025	0.3223
SIZE	-0.7492	-0.0343	0.0037	0.0000
CAPEX	0.1164	-0.0701	0.0005	0.0000

Source: Author's own compilation.

Now after making the selection of appropriate estimation technique, the next step is to incorporate the effect of macroeconomic variables along with firm specific variables into the model. The Table 3 shows six different fixed effect panel models in which different variables are

used as explanatory variables to study their impact on corporate liquidity in Pakistan economy.

Table 3: Impact of Macroeconomic Variables on Corporate Liquidity

Models	1	2	3	4	5	6
Constant	6.78***	-2.85**	-0.99	-1.52	1.40	0.02
	(6.04)	(-2.08)	(-0.74)	(-1.14)	(1.14)	(0.01)
CF	1.17***	1.04***	1.15***	1.05***	1.06***	1.04***
	(7.03)	(6.49)	(7.14)	(6.54)	(6.73)	(6.60)
LVG	0.88***	0.91***	0.87***	0.91***	0.89***	0.91***
	(5.09)	(5.51)	(5.19)	(5.48)	(5.47)	(5.55)
NWC	-0.01	0.14	0.11	0.15	0.14	0.16
	(0.06)	(1.08)	(0.86)	(1.15)	(1.06)	(1.22)
Size	-0.75***	-0.30***	-0.38***	-0.35***	-0.34***	-0.30**
	(-10.05)	(-3.51)	(-4.60)	(-4.24)	(-4.25)	(-3.70)
CAPEX	0.12	0.02	-0.08	-0.07	-0.03	-0.05
	(0.80)	(0.15)	(-0.59)	(-0.48)	(-0.20)	(-0.37)
PC		4.64***	3.30***	8.66***	3.77***	5.48***
		(7.41)	(5.33)	(10.99)	(6.19)	(6.27)

INF				-8.89***		-2.95***
				(-11.24)		(-2.72)
CS			47.99***			
			(10.30)			
GDP		21.23***				
		(11.84)				
Deficit		-17.69***	-10.26***	-24.43***	-8.13**	-13.90***
		(-8.60)	(-5.53)	(-9.95)	(-4.59)	(-5.04)
IR					-17.71***	-14.29***
					(-13.60)	(-7.90)
R^2	0.70	0.78	0.78	0.78	0.78	0.79
Adjusted R^2	0.68	0.74	0.74	0.74	0.75	0.75
N	2112	2112	2112	2112	2112	2112

*** shows coefficient is significant at 1% level, ** shows coefficient is significant at 5% level, and * shows coefficient is significant at 10% level, respectively.

Model 1 is firm specific fixed effect benchmark panel in which no macroeconomic variable is added. The findings of this model present that the variables cash flow, leverage and firm size are significant at 1% level which supports the findings of previous studies. Cash flow (CF) that represents firms' profitability has positive effect on cash holdings. It is suggested that firms hold more cash when they have higher cash flows consistent with financing hierarchy view of

corporate liquidity those firms prefer internal financing to external financing to fund their investment. Leverage (LVG) and cash holdings have positive relationship that is in favor of precautionary motive, which means that highly leveraged firms tend to keep more cash because of difficulty in financing to mitigate the risk of financial distress. Size of firms (Size) has negative coefficient supporting the evidence by (Opler et al., 1999; Ferreira & Vilela, 2004; Anjum & Malik, 2013) and implying that larger firms hold less cash because they have easier and cheaper access to financing, more diversified, have stable cash flows, lower probability of default risk and earn profit from economies of scale. The capital expenditure (CAPEX) and net working capital (NWC) are not found to be significant determinants of corporate liquidity in this study.

From Model 2 to 6, macroeconomic variables are added to study their influence on corporate liquidity of Pakistan economy and to check how they influences the cash holdings in Pakistan economy. Macroeconomic variables are not added simultaneously because of the concern of multicollinearity. The variables i.e. credit spread, economic growth rate, inflation, deficit, short-term interest rates and private credit have shown statistically and economically significant results at 1% level. Moreover, the increase in the value of R-Square after the inclusion of macroeconomic variables in the model has proved that the impact of these coincidental variables cannot be ignored while calculating the corporate liquidity in any nation.

Credit spread a proxy for credit risk and transaction cost motive has strong positive significant impact on cash holdings that signifies when there is liquidity problem in the market, transaction cost increases. Therefore, firms prefer to hoard more cash that supports trade off theory. This can also be inferred that when debt financing is difficult, firms hold more cash as a cushion due to increase in credit risk that supports precautionary motive (Chen and Mahajan (2010), Chen and Yo (2012), Acharya et al. (2012) and Abushammala and Sulaiman (2014). Economic growth rate (GDP) and corporate liquidity have positive and significant association suggesting that when there is higher economic growth, firms hold more cash to get benefit of

profitable investment opportunities (Chen &Mahajan, 2010; Chen & Yo, 2012; Abushammala & Sulaiman; 2014). The negative but significant impact of inflation is observed on corporate liquidity that favors the view of cash holdings should be discouraged when inflation is higher in the economy .It should get rid of non-interest bearing cash because purchasing power decreases. Government budget deficit has negative but significant influence on cash holdings indicating that firms reduce their cash holdings because of expected decrease in investment opportunities as economic growth decreases. (Chen & Mahajan, 2010; Chen & Yo, 2012; Abushammala & Sulaiman, 2014) are observing it. Private credit a proxy for the depth of debt market has positive coefficient sign suggested that when borrowing is deeper, firms increase their cash reserves as debt increases because, it provides safeguard against the risk of financial distress. This result support precautionary motive of cash holdings and are consistent with the findings of (Chen & Yo, 2012). Short-term interest rates have negative association with corporate liquidity that supports the speculative motive of money demand theory and demonstrates that negative impact of interest rate on cash due to high opportunity cost overpowers. The positive impact of interest rates on corporate liquidity are due to high cost of external financing. These findings are in line with the results of (Chen & Mahajan, 2010; Chen & Yo, 2012). From the estimated results, it has been found that all of the macroeconomic variables used in the study have significant impact on corporate liquidity in Pakistan economy. Hence, the macroeconomic conditions cannot be ignored while studying corporate liquidity.

To study the impact of leading macroeconomic variables on corporate liquidity, leading values of macroeconomic variables are measured by taking a value of corresponding macroeconomic variables for one year ahead. It is hypothesized that cash holdings is not only affected by the contemporaneous value of macroeconomic variables but also by the expected value of these variables in future. For testing this hypothesis, it is assumed that managers make rational decisions regarding cash holding management by keeping view the future expectations on macroeconomic conditions. The future expectations will help

managers to decide the level of cash holdings. For instance, if the economy is expected to improve then managers can go for two different decisions like either they should accumulate more cash reserves to take benefit of future profitable opportunities or should invest their cash reserves in available profitable projects because of opportunity cost of not investing. Similarly, if inflation is expected to go up then managers should hold less non-interest bearing cash to avoid decreasing purchasing power and invest more in interest bearing cash to get higher returns. Likewise, if credit spread is expected to increase in future then firms should hold more cash as precautionary motive because of expected increase in credit risk and higher transaction cost would be required to convert non-cash assets into cash. If private credit is expected to increase then either managers will hold less cash because borrowings are expected to be cheaper or they will hold more cash because of high leverage to avoid financial distress. If managers are expecting increase in interest rates then they should hold more interest bearing cash and reduce non-interest bearing cash because of opportunity cost. If government budget deficit is expected to increase in future then cash holdings should be decreased because government budget deficit decreases GDP, and increases interest rates and inflation so firms may not hold more cash because of lack of investment opportunities. However, it is important to consider that expected increase in budget deficit could also make firms to hold more cash as they are more uncertain about financial conditions so they will pile up cash as a cushion against economic uncertainties.

4.2.2 Empirical Results of Expectations on Macroeconomic Conditions

Table 4 exhibits the relationship between leading macroeconomic variables and corporate cash holdings. The four different models are estimated here. The rationale of these regressions is to examine whether expectations on macroeconomic variables have impact on corporate liquidity. These four different models show that all the modified variables incorporating the impact of future speculation have statistically and economically significant impact on corporate liquidity in Pakistan economy.

From Table 4 it can be observed that expected inflation has positive impact on corporate liquidity contrary to the negative relationship being observed in Table 3. This shows that managers hold more cash if inflation is expected to increase in future. Moreover, the results suggested that if management of the firms predict to increase inflation in future, then firms must have been holding more interest bearing cash in response to expectation of increase in inflation and reducing the non-interest bearing cash.

Table 4: Impact of Leading Macroeconomic Variables on Corporate Liquidity in Pakistan Economy

Models	1	2	3	4
CF	1.14***	1.06***	1.04***	1.06***
	(6.50)	(6.10)	(6.03)	(6.20)
LVG	0.93***	0.96***	0.98***	0.96***
	(5.10)	(5.36)	(5.49)	(5.41)
NWC	0.02	0.15	0.16	0.15
	(0.15)	(1.04)	(1.08)	(1.09)
Size	-0.61***	-0.26**	-0.30***	-0.28**
	(-7.27)	(-2.82)	(-3.29)	(-3.05)
CAPEX	0.15	0.03	0.01	-0.01
	(0.99)	(0.17)	(0.05)	(-0.06)
PC_{t+1}		6.52***	6.68***	3.87***
		(9.17)	(9.05)	(4.01)
INF_{t+1}			1.37*	5.11***
			(1.70)	(4.41)
CS_{t+1}		13.85***		
		(2.89)		
GDP_{t+1}	-14.65***			
	(-4.42)			
$Deficit_{t+1}$	14.28***	2.31		13.43***
	(6.37)	(1.08)		(4.48)

IR $_{t+1}$	-14.83***		-10.12***	-14.63***
	(-6.94)		(-5.91)	(-7.40)
Constant	7.77***	-2.15	-0.46	0.74
	(6.13)	(-1.47)	(-0.31)	(0.50)
R^2	0.75	0.76	0.76	0.77
Adjusted R^2	0.71	0.72	0.72	0.73
N	1848	1848	1848	1848

*** shows coefficient is significant at 1% level, ** shows coefficient is significant at 5% level, and * shows coefficient is significant at 10% level, respectively.

The expected short-term interest rates measured by leading short-term interest rates have negative impact on corporate liquidity similar to the results found in Table 3. It shows that managers reduce non-interest bearing cash and hold less cash if there is an expected or current increase in interest rates. However, it is understood that decrease in non-interest bearing cash due to expected increase in interest rates overrule the impact of increase in interest bearing cash to take advantage of higher interest rates. The expected economic growth has negative impact on corporate liquidity contrasting to relationship observed in Table 3. It demonstrates that if managers are predicting to increase in economic growth rate in future, then they utilize their cash holdings to take advantage of current profitable investment opportunities because of holdings cash has an opportunity cost of not investing in available profitable projects. In case of expected increase in government deficit, managers hold more cash because of greater economic uncertainty due to predicted increase in government deficit. It also indicates that managers keep more cash reserves in the light of precautionary motive. Expected increase in credit spread linked to likely rise in credit risk and transaction cost for firms which envisages that if the managers predict to increase in credit spread, then they hold more cash as a cushion to mitigate the expected increase in credit risk and expected illiquidity problems. Expected increase in private credit in future leads managers of the firms to hold more cash as borrowings are predicted to increase in future. It is to be noted here that manager's tendency to hold more cash is linked with the precautionary motive.

The expected increase in borrowing also uplift the possible risk of financial distress due to higher level of debt. Hence, firms increase their cash holdings if they are expected to borrow more in future. The overall results provided ample evidence that speculations about macroeconomic variables can also have significant influence on corporate liquidity decisions in Pakistan economy.

5. Conclusion and Policy Recommendations

The study examines the influence of these macroeconomic conditions on corporate cash holdings by focusing on how corporate liquidity is related to different macroeconomic variables in addition to firm specific determinants. The results on firm specific determinants are consistent with previous studies. The results on coincident macroeconomic indicators indicate that cash holdings is positively related with economic growth rate, credit spread and private credit. On the other hand, corporate liquidity is negatively related with inflation, government deficit and short term interest rates. All macroeconomic variables that includes private credit, government deficit, short term interest rates, credit spread, inflation and economic growth rate have shown persistent significant results in both Models i.e. model with and without expectations. The positive effect of GDP growth shows that firms hold more cash in order to have enough internal funds to take benefit of greater investment opportunities when economy is expanding. Inflation is negatively associated with cash holdings favors the view that rise in inflation discourages firms to hold non-interest bearing cash and persuades them to keep interest bearing cash. Meanwhile, cash holdings of Pakistani firms are founded to be negatively influenced by government budget deficit signifying that firms hold less cash if government deficit is higher. It supports the view that government deficit causes GDP to decrease that result in fewer investment opportunities and it discourages firms to hold cash for future investment purpose. It can also be taken as government budget deficit increases, inflation goes up that discourages firms to hold cash because purchasing power erodes. The positive relationship between credit spread and corporate liquidity shows that firms have high level

of cash holdings when transaction cost of converting liquid asset into cash and credit risk are high. This is because firms increase their cash reserves when debt financing is difficult due to higher credit risk or when the markets are illiquid according to transaction cost motive. Private credit and cash holdings showed positive relationship signifying that when borrowing is deeper, firms hold more cash to prevent from financial distress that can be arise due to higher debt. It can be implied that Pakistani highly leveraged firms tend to hold more cash as a safeguard against credit risk. Short-term interest rates have negative impact on cash holdings of Pakistani non-financial firms because when interest rates are high, the opportunity cost of keeping cash is also high, so firms keep less cash. The possible impact of expected macroeconomic conditions on corporate liquidity in Pakistan has also been studied along with the contemporaneous impact of macroeconomic conditions on cash holdings. It is assuming that managers are rational decision makers; it is proven through results that there exist statistically significant relationship between speculations and corporate liquidity.

This study provides policy implications for the government of Pakistan that country-level coincident indicators have an overruling impact on firm specific determinants. Based on these findings the study suggests that during higher budget deficit and high inflation, firm managers should switch their corporate liquidity components in more interest bearing assets in order to avoid the decrease in purchasing power. Few affirmative actions are required at governmental level that they should reduce excessive spending that result in consistent budget deficit so that firms should not keep holding cash and forgoing investment opportunities due to prevalence of economic slowdown.

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