

Cash Holdings of Hotel Firms: The Financial Constraints Perspective

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ABSTRACT

Financial literature of cash or liquidity management has recently focused on the role of financial constraints on firms' liquidity decision. Even though the accessibility to capital market is considered as one of major topics in hotel firms' financial management considering high usage of debt financing, little effort has been made. Considering the extent of hotel firms' financial constraints, this study examines the precautionary motive of cash holding toward external financing (debt) and internal financing (cash flow). Using two financial constraint measurements, bond rating and dividend payment, the study tests the relation of cash to debt and cash flow. Regardless of the extent of financial constraints, cash holding is negatively related to debt, which is partially different from the expectation, indicating the accessibility to capital market of hotel firms. Practical implication for manager and future researches are discussed.

Keywords: *cash holding, financial constraints, debt, cash flow, hotel firms*

INTRODUCTION

The fact the firms in the U.S. hold a substantial amount of cash and cash equivalents has capture attention among scholars and practitioners for over a decade. Early studies show the average cash and marketable securities to total assets is 6% to 8.6% (e.g. Kim, Mauer, & Sherman, 1998; Opler, Pinkowitz, Stulz, & Williamson, 1999) A recent study by Duchin (2010) indicates the explicit increasing pattern of cash holding in the U.S (i.e., the average cash holding to total assets of firms in the U.S. in 2006 is 10.2%). High portion and growing pattern of corporate cash holding could be not explain by formal models (e.g., Baumol, 1952; Tobin , 1956). To explain the motive or determinants of cash holding, extensive studies use trade-off of cash holding and pecking order theory of capital structure. Kim et al. (1998) claim that the level of cash holding is determined at a point where the marginal benefits and the marginal costs of cash holding are equal. According to Opler et al. (1999), firms finance possible investment projects,

repay debt when due, and finally accumulate unused cash. That is, the level of cash holdings is just an outcome of cash inflow and outflow, suggesting that examining cash flows is important in order to estimate the level of cash holdings. Despite these recent efforts, it is difficult to accept that the cash holding behavior of firms has been largely revealed (Ferreira & Vilela, 2004).

To further understand the cash holding behaviors of firms, recent studies have made efforts to utilize the concept of financing constraints. Almeida, Campello, and Weisbach (2004) examined the role of financial constraints and found a significant positive relationship between cash flow and cash holding in financially constrained firms. Acharya, Almeida, and Campello (2007) analyzed the relationship between debt and cash holding of firms in different financial constraint situations. For financially constrained firms debt was positively related to cash holding, whereas unconstrained firms showed a negative relationship between those variables.

An appropriate cash holding strategy is critically important in the hotel industry because the seasonal demand of tourism can increase the fluctuation of operational incomes of hotel firms (Baum & Lundtorp, 2001). Furthermore, since hotel firms are generally highly leveraged (Jang, Tang, & Chen, 2008), they are greatly exposed to interest rate risk. Considering the potential increases in interest payments, hotel firms should pay attention to cash holding strategies. Due to the high leverage nature of the hotel industry, it is worthwhile to investigate cash holding by hotel firms from the perspective of financial constraints. Thus, the objective of this study was to investigate the cash holdings of hotel firms in different financial constraint situations in association with debt and cash flow.

LITERATURE REVIEW

Debt

A firm can use internally available cash to finance new investments. The firm can also accrue additional debt to finance a project. Hence, cash and debt can be viewed as substitutes for financing. Studying the relationship between debt and cash holdings, John (1993) found that financially leveraged firms were able to access capital markets relatively easily. Consequently, they were not motivated to hold cash, which suggested a negative relationship between debt and cash holding.

The pecking order theory supports a negative relationship between debt and cash as well. When cash outflow exceeds cash inflow, a firm first uses internal cash. If the cash balance is not sufficient, a firm issues additional debt as the next step. In other words, as cash holdings decrease, debt increases. However, when cash inflow is more than sufficient to cover cash outflow, a firm can accumulate leftover cash and/or repay the principle of debts. This also supports the view of a negative relationship between debt and cash holding. However, Acharya et al. (2007) indicated that these explanations are valid only for financially unconstrained firms. Even when cash inflow is temporarily greater than cash outflow, a firm with financial constraints would retain cash for

future liquidity demand rather than repaying debt. Further, financially constrained firms harness their debt capacity to accumulate cash for future use, which suggests a positive relationship between debt and cash holding (Acharya et al., 2007). Accordingly, financial constraints play an important role in the relationship between debt and cash holdings of hotel firms. Therefore, we hypothesized as follows:

Hypothesis 1: The relationship between debt and cash holdings of hotel firms varies depending on financial constraints.

Hypothesis 1a: For financially constrained hotel firms, cash holding is positively related to debt.

Hypothesis 1b: For financially unconstrained hotel firms, cash holding is negatively related to debt.

Cash flow

Cash flow is considered to be one important source of funds for financing investment opportunities. When there is positive cash inflow, a firm can use the cash flow to finance projects. This means that cash flow can be a substitute for cash, suggesting a negative relationship between cash flow and cash holding. However, Opler et al. (1999) claimed that if operating cash flow exceeds investment needs, firms usually repay debts and/or accumulate cash, suggesting that cash holding increases with cash flow.

According to Almeida et al. (2004), the relationship between cash flow and cash holding may become distinct if the concept of financial constraints is applied. A firm with difficulty in accessing the capital market is motivated to hold back cash from their cash flow. Thus, cash holding can be seen as positively related to cash flow. However, for unconstrained firms cash flow and cash are substitutes for financing projects, consequently assuming a negative relationship. Therefore, we hypothesized as follows:

Hypothesis 2: The relationship between cash flow and cash holding for hotel firms varies depending on financial constraints.

Hypothesis 2a: For financially constrained hotel firms, cash holding is positively related to cash flow.

Hypothesis 2b: For financially unconstrained hotel firms, cash holding is negatively related to cash flow.

METHOD

The data used in this study was collected from the COMPUSTAT database using the SIC 7011. The data covers U.S. lodging firms between fiscal year 1988 and 2008. A total of 1,319 firm-quarter observations from 47 lodging firms were used for analysis.

There are several control variables included in the model. Fixed asset (PPE) was included to control the effect of collateral assets on financing. To control fluctuation of operating and seasonality, we included cash flow volatility (STD) and the quarter dummy variables (Q2, Q3, and Q4), respectively. Net working capital (NWK) was used to control the substitutability between cash and other liquid assets. This study included two control variables to control cash outflow: capital expenditure (CE) and acquisition spending (ACQ). Firm age (AGE) was included to control different demand of liquid depending on the firms' growth stage.

Financial constraint is usually defined as the accessibility of the capital market (Schiantarelli, 1996). This study used two different variables for financial constraints: dividend payment and bond rating (Almeida et al., 2004; Fazzari et al, 1998). Whether a firm pays dividends or not is often used for financial constraint. If a firm paid dividends during the sample period, it was categorized as a financially unconstrained firm; otherwise, it was categorized as a constrained firm. The bond rating represents how the credit market evaluates a firm's credit quality. If a firm never had public bond ratings during the sample period, it was considered financially constrained. If a firm had bond ratings, it was considered unconstrained.

Table 1
Variables and Description

Variable	Description
Cash holding (CASH)	Cash and cash equivalent / total assets
Debt (DEBT)	Total debts / total assets
Cash flow (CASHFLOW)	Earning after interest and tax before depreciation and amortization / total assets
Fixed assets(PPE)	Plant, Property, and Equity / total asset
Net working capital (NWK)	(Current asset – current liability – cash)/total assets
Standard deviation of cash flow (STD)	Standard deviation of twelve-quarter cash flows
Capital Expenditure (CE)	Capital expenditure / total assets
Firm age (Age)	Monthly based firm age
Acquisition (ACQ)	Acquisition / total assets
Quarter dummy variables (Q2, Q3, and Q4)	Dummy variable of each quarter, except the first quarter
Market-to-book ratio (MTB)	[(Stock price x common stock outstanding) + book value of leverage] / total assets
Firm size (LnSIZE)	Logarithm of total assets

Previous studies suggest an endogenous relationship between debt and cash holding (Opler et al., 1999; Dello, Krishnaswami, & Larkin, 2007). Cash holding and debt are usually decided simultaneously as series of financial policies. Within the pecking order theory, the level of cash holding could affect additional debt issued when cash inflow is not sufficient to cover cash outflow. To address this endogeneity problem, two stage least square (2SLS) regression was used in this study. Market-to-book ratio and firm size were used as instruments to predict debt ratio in the 2SLS model (Dello et al., 2007). To check endogeneity and the appropriateness of instruments, this study used the Durbin-Wu-Hausman (DWH) test and the Sargan test, respectively.

$$\text{CASH} = \beta_0 + \beta_1\text{DEBT} + \beta_2\text{CASHFLOW} + \beta_3\text{PPE} + \beta_4\text{STD} + \beta_5\text{NWK} + \beta_6\text{ACQ} + \beta_7\text{AGE} + \sum\beta_{8-10}\text{Q}_{2-4} + \varepsilon$$

Table 2 describes the variables used in this study. The mean of cash holding to total assets is 8.6%. There is high variance in cash holding ratio. Cash holding in the hotel industry is not much different from previous studies for overall industry or specific one (e.g., Hardin, Highfield, Hill, & Kelly, 2009; Kim, et al., 1998; Opler, et al, 1999). Debt to total assets and cash flow to total assets are .648 and .029 respectively.

Table 2
Descriptive Statistics of Variables

	Mean	Std. Dev.
CASH	0.086	0.166
DEBT	0.648	0.237
CASHFLOW	0.029	0.071
PPE	0.637	0.288
STD	0.033	0.061
NWK	-0.086	0.171
CE	0.048	0.071
ACQ	0.007	0.034
AGE	227.177	221.002
MTB	0.656	0.901
SIZE	1481.435	2932.393

Before 2SLS regression, univariate analysis was performed in order to explicit the financial characteristics difference between financial constrained and unconstrained firms. Firms were divided into the two groups by two financial constraints categorical variables: dividend payment and bond rating. Then difference in means of key variables (i.e., cash holding to total asset, debt to total assets, and cash flow to total assets) was tested. The results are presented on Table 3. In general, firms paying dividend (or having bond rating) have more cash holding than those firms which don't pay dividends (or have bond rating) but the differences are not significant. This result are quite different from previous studies about cash holding and financial constraints (e.g., Almeida & Campello ; 2007, Almeida, et al., 2004). The difference in debt ratio

varies depending on financial constraints variables. Dividend-paying (unconstrained) firms have higher debt ratio than non-dividend paying (constrained) ones. However, under the other financial constraints variables, bond rating, the results are opposite: firms whose bonds are rated have high debt ratio than those firms having bond rating. This lack of robustness indicates there is no systematic pattern of financial leverage between the two groups. For means of cash flow, the two group are not significant different.

Table 3
Firms' Characteristics by Financial Constraint Variables

	Dividend			Bond rating		
	Constrained	Unconstrained	t-value	constrained	unconstrained	t-value
CASH	0.092	0.078	1.530	0.089	0.080	0.983
DEBT	0.634	0.666	-2.406**	0.676	0.594	6.026***
CASHFLOW	0.028	0.032	-1.075	0.029	0.029	0.083
Number of observations	757	562		867	452	

Note: *p<.1; **p<.05; ***p<.01.

RESULT

Prior to testing the relationship between cash holding and debt (cash flow) in hotel firms, DWH tests were performed. All results of DWH test for four equations indicate that the estimator of OLS regression is not consistent and then 2SLS regression is preferred. To check overidentification of instruments, the Sargan test was conducted. The results revealed that the selection of instruments was appropriate as well.

As shown in Table 4, the negative coefficients of debt in four models indicate that debt was negatively associated with cash holding whether a firm was financially constrained or unconstrained. That is, those hotel firms who have higher debt ratios are less likely to have cash holdings. This result supported our hypothesis for financially unconstrained hotel firms, but not for constrained firms. In general, it is consistent with the pecking order theory under which firms use internal funds and then raise fund in debt market. In terms of financing source, cash holding and debt are substitutive in the hotel firms. On the other hand, the common financial constraints concept was not fully applicable in explaining the relationship between debt and cash holding for hotel firms. It is due to the fact that hotel firms have different organization forms, such as real estate investments (REIT) and C-corporation. The conventional measurements of financial A current study of cash holding in REIT uses credit lines(access to private bank debt) as the accessibility to capital market (Hardin et al., 2009). The extent of credits line and the amount of debt from credit lines used as determinants of cash holding in REIT are negatively related to cash holding.

Table 4
Results of the 2SLS Regression

	Financially constrained firms				Financially Unconstrained firms			
	Dividend payment (No)		Bond rating (No)		Dividend payment (Yes)		Bond rating (Yes)	
	Coeff.	t	Coeff.	t	Coeff.	t	Coeff.	t
DEBT	-0.821	-6.68***	-0.780	-8.00***	-0.521	-6.28***	-0.960	-11.87***
CASHFLOW	0.198	2.48**	0.163	2.17**	-0.126	-0.86	0.296	0.77
PPE	-0.113	-2.86***	-0.074	-2.03**	-0.082	-3.74***	-0.160	-7.67***
STD	0.757	5.85***	0.762	8.31***	0.992	14.77***	1.805	3.48***
AGE	0.001	3.57***	0.001	5.86***	0.001	6.94***	0.001	5.97***
NWK	-0.295	-5.33***	-0.237	-5.91***	-0.207	-5.27***	-0.543	-6.14***
CE	-0.481	-3.85***	-0.471	-4.21***	-0.143	-1.14	-0.159	-1.75*
ACQ	-0.505	-1.92*	-0.195	-1.05	-0.009	-0.09	0.150	0.95
Q2	0.008	0.41	0.006	0.34	0.006	0.50	0.002	0.15
Q3	0.010	0.49	0.007	0.39	0.010	0.88	-0.001	-0.05
Q4	0.040	1.87*	0.025	1.36	0.011	0.89	0.012	0.62
CONSTANT	0.606	10.38***	0.578	11.78***	0.393	8.95***	0.619	15.55***
N	757		867		562		452	
F-value	28.86		49.99		80.37		22.65	
R2	0.1774		0.143		0.6246		0.0587	
Sargan(χ^2)	1.87		1.31		3.74*		3.62*	
DWH(χ^2)	44.77***		67.12***		9.35***		115.62	

Note: *p<.1; **p<.05; ***p<.01.

Perhaps hotel firms can access the debt market with collateral assets relatively easily. Secured debt, debt backed by collateral assets, can decrease the cost of financial distress and eventually lower the cost of debt (Arbel & Woods, 1990; Barclay & Smith, 1995). Consequently, both financially constrained and unconstrained hotel firms can access the capital market by utilizing their collateral assets. Accordingly, both hotel firms were found to have a negative relationship between debt and cash holding, which partially differed from our expectations.

In terms of cash flow, cash holding appeared to have a positive relationship with cash flow for financially constrained firms, supporting our hypothesis. However, unconstrained hotel firms did not show any systematic pattern between cash flow and cash holding, which was consistent with the results of Almedia et al. (2004). Financially constrained hotel firms tended to save cash in advance for future need for fund as their cash flow increased. Difficulty in accessing the capital market encourages hotel firms to retain unused cash flow as a form of cash. However, unconstrained firms did not appear to have the same motivation to save.

CONCLUSION

This study investigated cash holding by hotel firms in association with debt and cash flow in different financial constraint situations. Contrary to our expectation, debt is negatively related to cash holding for either financially constrained or constrained firms. This relationship intensify the notion of the pecking order theory to cash holding under which firms first use their cash reserved and then raise addition funds in debt market if cash is not sufficient to offset the outflow of funds. Financial constraints were found not to be appropriate in explaining the relationship between debt and cash holding by hotel firms. However, we suspect the validity of measurement of financial constraints in the study. The conventional measurements of financial constraints may not be appropriate to explain this relationship in the hotel industry because the sample in the study largely consists of two organization forms: real estate investment trust (REIT) and C-corporation. The measurements to access to capital market may differ between two groups so the more industry fitted measurement of financial constraints is needed.

The results of 2SLS regression show that cash flow is positively related to cash holding for financial constrained hotel firms whereas the relationship is not significant for unconstrained ones. This result shows which conditions hotel firms allocate their internally generated funds to cash holding after controlling possible cash outflow, such repaying (or raising) debt and investing the fixed assets. It provides a managerial implication of managers: if hotel firms have difficulty to access the capital market, they may consider retaining cash out of cash flow. However, the model in this study does not explain the relation cash flow and debt, which may be one of the most important factors on internal capital market in hotel firms because it is not the focus of the study. For comprehensive view of cash holding, the allocation of cash flow to debt should be explained after controlling debt financing activity.

The above limitation of this study may lead to future researches. The develop industry fitted financial constraints measurement could be one of possible further researches. In order to provide an extensive view of cash holding, inflow and outflow of funds due to operating activity as well as financial activity should be examined. In addition, even if this study provided some unique characteristics of cash holding in hotel firms, it did not include uniqueness of the hotel industry. Future study should take some the uniqueness into account for the cash holding behavior in hotel firms.

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