The Precautionary and Transaction Motives for Cash Reserves: The Unique Case of Hotel REITs

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Abstract

The purpose of this study was to examine whether the precautionary and transaction motives play important roles in explaining cash holdings for hotel REITs. In order to examine these roles empirically, this study investigates the effects of firm size, leverage, investment opportunities, cash flow, and cash-flow volatility on hotel REITs’ cash-holding levels. By developing a weighted least square (WLS) regression model with a panel data set of twenty publicly traded hotel REITs in the US capital markets between 2005 and 2014, this study finds that hotel REITs with lower cash reserves tend to be larger and have higher levels of cash flow from operations, while hotel REITs with higher levels of leverage, better investment opportunities, and greater cash-flow volatility were shown to hold more cash and marketable securities. The findings identify the precautionary and transaction motives as the key drivers of cash-holding behavior within hotel REIT sector.

Keywords: cash holdings, cash-holding levels, hotel REITs, precautionary motive, trade-off theory, transaction motive

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I. Introduction

In 1993, a new property sector was created within the hotel domain, one whose immediate and explosive growth would dilate the flow of capital into the lodging industry. This was the hotel real estate investment trust sector, and its growth surge throughout the 1990s wrought fundamental changes in the hotel real estate landscape. That surge did not end with the new millennium: while hotel real estate investment trusts (hereinafter, “hotel REITs”) were capitalized at a remarkable $8.8 billion in 1999, by last year their capitalization had swelled to $35 billion (Grupe & DiRocco, 1999; National Association of Real Estate Investment Trusts, 2015). Hotel REITs are now an indispensible part of both the hotel and REIT domains, with hotel REITs comprising half of all hotel C-corporation market capitalization by 2009 (Kim & Jang, 2012) and some 5% of the REIT equity market’s $719 billion capitalization by 2014 (National Association of Real Estate Investment Trusts, 2015). Given such capitalization, the hotel REIT industry presents an excellent opportunity to investigate the degree to which investment opportunities and growth motivate the holding of cash, as it is cash that drives the investment, expansion, and mergers and acquisitions that comprise hotel REITs’ cornerstone activities (Bates et al., 2009; Hardin et al., 2009).

Corporate cash holding is a current and critical topic as the new millennium has been a period of unprecedented cash accumulation by firms (Drobetz et al., 2010; Duchin, 2010; Fischer et al., 2014; Heller, 2015). Yet surprisingly, REITs have bucked this trend by maintaining some of the lowest cash holdings of any industrial sector (Hardin et al., 2009). While industrial firms’ average cash ratio was 10.50% in 1980, it was 23.20% by 2006 (Bates et al., 2009), making the average rate 17.26%. In contrast, between 1998 and 2006, REITs were shown to maintain average cash ratios as paltry as 2.07% of total assets (Hardin et al., 2009). As Hardin et al. (2009) point out, REITs require customized liquidity levels because they operate under quite different legal and business environments than do other firms: REITs must retain a minimum of three quarters of their assets as real estate or real estate mortgages, meaning REITs are never without substantial physical assets on hand (Malley, 1997). REITs are also legally bound to pay out 90% or more of their taxable income to shareholders (Corgel et al., 1995), making REITs heavily dependent on the capital markets. With cash constantly going out the door in the form of dividends,
REITs have great difficulty building up cash stockpiles (Hardin et al., 2009). Having few internal cash sources left to rely on, REITs simply must seek external resources to fund investment and development (Beals & Arabia, 1998). The particular focus of this study, hotel REITs, are a unique property sector within the REIT industry, whose members invest 75% or more of their assets in hotel real estate or mortgages on hotel real estate (Malley, 1997). Investors who prize the long-term benefits that hotel real estate can provide are thus especially well served by hotel REITs (Kim et al., 2002).

The trade-off theory focuses on a cost-benefit approach to cash holding, noting that firms identify their optimal levels of cash on hand by weighing the marginal benefits and marginal costs of such cash holdings (Ferreira & Vilela, 2004). In this approach, firms are expected initially to desire low cash holdings but to balance that desire against the precautionary and transaction motives. These two essential motives were defined by Keynes (1936) and vitally explain the underpinnings of cash holdings. The precautionary motive states that firms hold cash as a buffer against possible adverse shocks in the future or, conversely, to take advantage of profitable investment opportunities in the future (Myers & Majluf, 1984). The transaction motive arises from the fact that firms retain cash to avoid the transaction costs of selling illiquid assets and using the capital markets to raise funds (Bates et al., 2009; Han & Qui, 2007). According to this motive, the holding of cash becomes a buffer between the firm’s sources of and use of funds, minimizing costs (Ferreira & Vilela, 2004).

More recently, as the trove of cash reserves has approached a breathtaking two trillion dollars (Heller, 2015), corporate cash holdings have begun to trigger public controversy. Press stories have made corporate cash hoards the touchstone for presumed tax dodging, with examples like Apple’s $74 billion cash stockpile—held in non-resident status outside the US and taxed at a mere 2%—fueling public outrage (Shaxson, 2015). Such widespread anger may align with investor dissatisfaction, as recent research confirms that cash holdings continue to be key factors underpinning agency problems and shareholder revolts (Chen et al., 2014; Horioka & Terada-Hagiwara, 2014; Kusnadi, 2015; Liu et al., 2015). Hotel REIT investors, who put their money into these trusts with the understanding that dividend payouts will be consistently high, are apt to be especially suspicious of REIT management’s retention of cash, making cash-holding-derived agency conflicts especially likely in the hotel REIT context.
Yet in light of the unique legal constrictions on hotel REITs and the rarefied relationship to cash holdings they have created in that sector, do the precautionary and transaction motives for cash holdings affect hotel REITs as they clearly do firms in general? This study attempts to answer that question. By providing specific empirical findings on firm-specific variables, this study will allow hotel REIT managers to provide cogent explanations of their cash-holding policies to dividend-dependent investors, heading off agency conflicts and ensuring smooth operations in their trusts. This study will also allow hotel REIT managers and investors to examine their firms’ cash-holding levels and evaluate their potential excessiveness or paucity in the hotel REIT milieu. Furthermore, the findings of this study should provide hotel REIT managers with in-depth insights into hotel REITs’ cash-holding behavior, thereby implementing cash policies that maintain and boost firm value.

II. Literature Review and Development of Hypotheses

A wealth of prior research has examined—theoretically and empirically—the ways that precaution and sensitivity to transaction costs motivate firms to stockpile cash (e.g., Bates et al., 2009; Fazzari & Petersen, 1993; Ferreira & Vilela, 2004; Fischer et al., 2014; Han & Qiu, 2007; Kim et al., 1998; Minton & Schrand, 1999; Moon et al., 2015; Opler et al., 1999; Ozkan & Ozkan, 2004). Firm size, levels of leverage, investment opportunities, cash flow, and the volatility of cash flow are the variables most heavily examined in previous studies. Each is dealt with in the following section with an eye to both a theoretical background of and previous empirical findings on corporate cash holdings.

1. Firm size

It is clear across the discussion of cash-holding determinants that cash on hand may only be truly desirable if borrowing is impossible; hence, borrowing capacity acts as a cash substitute and reduces the motivation to hold cash. Rajan and Zingales (1995) and Titman and Wessels (1988) both argued that borrowing capacity largely depends on the reduced bankruptcy risks of large firms (which makes it easier for such firms to sustain relationships
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with lenders), while smaller firms (lacking these friendly relationships) must hold higher cash levels to ameliorate such risks. Since smaller firms cannot rely on lenders’ being there when they need them (Fazzari & Petersen, 1993; Horioka & Terada-Hagiwara, 2014; Kim et al., 1998; Kim et al., 2011; Ozkan & Ozkan, 2004), smaller firms prepare to go it alone: they tend to favor higher cash balances for funding operations and hedging future risks. This proposition is in line with the effects of economies of scale as borrowing costs will be relatively less onerous for larger firms than for smaller ones (Miller & Orr, 1966).

The preceding line of argument suggests greater size will equate to lower cash holdings, a negative relationship between these variables. Bates et al. (2009), D'Mello et al. (2008), Ferreira and Vilela (2004), Harford et al. (2008), Horioka and Terada-Hagiwara (2014), Kim et al. (2011), Opler et al. (1999), and Ozkan and Ozkan (2004) all provide empirical evidence of a negative relationship, suggesting larger firms rely on external capital and eschew cash while smaller firms build relatively larger cash reserves. Fischer et al. (2014), conversely, documented a recent positive relationship between firm size and held cash among top US industrial firms, which they attributed to such firms’ post-2007 liquidity concerns. Yet most relevant to the hospitality context, Kim et al. (2011) found firm size and cash holdings to be negatively related in their study of the US restaurant industry, while Moon et al. (2015) showed larger airline firms tended to pay higher dividends and retain less cash. Accordingly, this study suggests the following hypothesis:

H1: There is a negative relationship between cash holdings and firm size in hotel REIT firms.

Following the methodology of Bates et al. (2009), Ferreira and Vilela (2004), Han and Qiu (2007), and Opler et al. (1999), the firm size of the sampled hotel REITs is measured by the natural logarithm of total assets and is identified as TA. Hotel REIT firms vary widely in their firm sizes, so this logarithm is necessary to facilitate accurate comparison.

2. Leverage

Countervailing arguments exist predicting the effects of leverage on cash-holding behavior at the firm level, which may be resolvable based on the role of informational asymmetries.
Firms with lower transparency will find borrowing more difficult (Myers & Majluf, 1984), as in Chen et al.’s (2014) finding that Chinese firms in regions with poor government endured reduced access to financing and Liu et al.’s (2015) finding that family-controlled firms with high opacity held more cash while family firms with strong external connections held less. Firms that cannot or will not amass cash—those that must rely on borrowing—may display high leverage and very low cash holdings, reducing information asymmetry. Moreover, Hardin et al. (2009) argues that leverage can be utilized as a bonding mechanism to reduce the agency problem caused by the free cash flow problem, implying an inverse relationship between leverage and cash holdings. However, a dissenting view, argued for by Ferreira and Vilela (2004), points out that higher leverage will necessarily mean higher bankruptcy risks. Firms may try to balance these risks by holding cash in reserve, creating a positive relationship between these variables (Ferreira & Vilela, 2004). Fischer et al. (2014) found such a positive relationship in their study of the S&P 100 firms.

Previous cash-holding studies by Bates et al. (2009), D’Mello et al. (2008), Ferreira and Vilela (2004), Kim et al. (1998), Opler et al. (1999), and Ozkan and Ozkan (2004) have validated a negative relationship between cash holding and leverage, suggesting firms with the ability to borrow heavily do not need to amass cash. Following the logic of Hardin et al. (2009) and the bulk of empirical findings, this study proposes the following hypothesis:

H2: There is a negative relationship between cash holdings and leverage in hotel REIT firms.

In line with four influential prior studies (Bates et al., 2009; Opler et al., 1999; Ozkan & Ozkan, 2004; Subramaniam et al., 2011), the debt ratio (LEV), which is the ratio of total liabilities to total assets, is employed to measure each hotel REIT’s leverage.

3. Investment opportunities

According to Hardin et al. (2009), firms that do not foresee profitable investment opportunities in the near term may consider it possible to weather a period of financial distress without significant damage, even without cash on hand. However, firms anticipating investment opportunities will be especially sensitive to the dangers of financial distress, as
investment opportunities will have to be sacrificed (Bates et al., 2009; Ferreira & Vilela, 2004; Hardin et al., 2009). This sensitivity manifests as the precautionary motive of the trade-off theory (Ferreira & Vilela, 2004) and creates a positive relationship between investment opportunities and cash-holding levels.

Studies that have empirically confirmed this positive relationship include Bates et al. (2009), Ferreira and Vilela (2004), Hardin et al. (2009), Kim et al. (1998), Opler et al. (1999), and Ozkan and Ozkan (2004). Furthermore, the bulk of prior cash-holding analyses note the role of the precautionary motive in encouraging cash reserves (e.g., Han & Qui, 2007; Harris & Raviv, 1990; Kusnadi, 2015; Ozkan & Ozkan, 2004; Shleifer & Vishny, 1992). Thus, the present study proposes the following hypothesis:

H3: There is a positive relationship between cash holdings and investment opportunities in hotel REIT firms.

In the vein of papers by Bates et al. (2009), Ferreira and Vilela (2004), Hardin et al. (2009), Kim et al. (1998), and Opler et al. (1999), the market-to-book ratio (MTBR), which is the ratio of book value of total assets minus book value of equity plus the market value of equity to the book value of total assets, is employed as a proxy for each hotel REIT’s investment opportunities.

4. Cash flow

A seminal underpinning of modern cash-holding analyses is the notion that management retains cash to secure and increase its ability to operate freely, without the oversight and interference of lenders or investors (Hardin et al., 2009; Jensen, 1986; Jensen & Meckling, 1976). According to this interpretation, cash flow should equate negatively with cash holdings: incoming funds from operations provide flexibility to managers on an ongoing basis and obviate their need to maintain large balances of cash (Kim et al., 1998). Fischer et al. (2014) and Opler et al. (1999) both took a contrary view, however, suggesting that management’s overwhelming desire to ensure operational freedom will cause it to build up cash reserves when cash flow is abundant, resulting in a positive relationship between these variables. Horioka and Terada-Hagiwara (2014) demonstrated a positive interaction between
cash flow and cash holding in Asian firms, particularly among smaller and more-constrained enterprises.

The most convincing evidence, however, such as that in Hardin et al.(2009), Jensen(1986), Jensen and Meckling(1976), and Kim et al.(1998) shows that cash-flow increases do tend to result in lower cash holdings. Hence, the present study proposes the following hypothesis:

H4: There is a negative relationship between cash holdings and cash flow in hotel REIT firms.

In the mode of several prior cash-holding studies(e.g., Han & Qui, 2007; Subramaniam et al., 2011), this study measures the sampled hotel REITs’ cash flow by the ratio of the sum of earnings before extraordinary items and depreciation and amortization to total assets(CF).

5. Cash-flow volatility

There is good reason to expect a positive interaction between cash-holding levels and cash-flow volatility. When cash flow is less predictable, cash shortages become more likely, driving managers to amass cash proactively(Ferreira & Vilela, 2004). Minton and Schrand(1999) posited that firms exposed to more frequent cash-flow shortfalls face higher costs for external capital, pushing such firms to hold more cash to cope with their volatile cash supply.

The studies by Bates et al.(2009) and Opler et al.(1999) both provide empirical evidence that firms with riskier cash flows do tend to build up higher cash holdings. Furthermore, Han and Qiu(2007) showed that financially constrained firms raise their cash-holding levels in response to increases in cash-flow uncertainty. Based on these theoretical and empirical findings supporting the positive relationship between cash-flow volatility and cash holdings, the present study presents the following hypothesis:

H5: There is a positive relationship between cash holdings and cash-flow volatility in hotel REIT firms.
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Following several prior cash-holding studies (e.g., Harford et al., 2008; Ozkan & Ozkan, 2004), this study takes cash-flow volatility to be the ratio of the standard deviation of cash flow over the previous three-year period to total assets (CFV). To measure cash-flow volatility for the sampled hotel REITs, this study takes cash flow to be the sum of earnings before extraordinary items and depreciation and amortization.

III. Data and Methodology

1. Data

In order to examine the roles of the precautionary and transaction motives in explaining hotel REITs’ cash holdings, this study used the COMPUSTAT database to construct a sample of US hotel REITs with a Standard Industry Code (SIC) of 6798 during the period from 2005 and 2014. Twenty-six publicly traded hotel REITs on the New Stock Exchange (NYSE), the American Stock Exchange (AMEX), and the National Association of Securities Dealers Automated Quotations (NASDAQ) were first drawn from the COMPUSTAT database.

Three actions were taken to ensure the dataset would be viable for examination. Firms missing firm-year data for variables examined in this study were removed from the sample; hotel REITs with fewer than five consecutive years of accounting data available were similarly removed, and firm-year observations lacking cash-flow data from the previous three-year period were excluded. This was necessary as the standard deviation of cash flow from the prior three years was used to measure the cash-flow volatility variable. Given these safeguards, the study retained twenty hotel REITs and extracted 127 firm-year observations for use in analysis.

2. Measures of cash holdings and statistical analyses

The cash-holding level of each sampled hotel REIT was measured by its cash ratio. Following the methodology employed by Bates et al. (2009) and Kim et al. (1998), this
study defined the cash ratio as the ratio of cash and marketable securities to total assets(CASH). Because a skewed distribution was evident in the initial dataset, the natural logarithm of the cash ratio was taken. This process normalized this variable and tamped down the effects of outlying data points.

In order to examine the roles of the precautionary and transaction motives in explaining hotel REITs’ cash holdings, this study investigated the effects of firm size, leverage, investment opportunities, cash flow, and cash-flow volatility on their cash-holding levels. The weighted least-squares(WLS) regression method was therefore used to estimate a regression model that could identify the factors influencing the cash-holding levels of hotel REITs. Cross-firm regressions frequently give rise to heteroskedasticity, violating key residual assumptions of regression, but WLS regression analysis solves this problem(Kleinbaum et al., 1988). The weights used in this study are the reciprocals of the absolute values of the unstandardized residuals that are derived by running the study’s five independent variables through a first-path ordinary least squares(OLS) regression model.

IV. Results

1. Cash-holding levels of US hotel REITs from 2005 to 2014

Table 1 summarizes the cash-holding levels for the sampled US hotel REITs for the ten-year sample period. The table shows that the mean cash ratio of these hotel REITs is 4.05%. This mean value is much less than those of publicly traded US firms, industrial firms, and hotel firms as reported by previous studies: Opler et al.(1999) report that the mean cash ratio for US firms from 1971 to 1994 was 17%. In Bates et al.’s(2009) study, the mean cash ratio for US industrial firms from 1980 to 2006 was reported as 17.26%. Woods et al.’s(2011) study notes that the mean cash ratio for US hotel firms from 1997 to 2008 was 8.83%. These comparatively low cash ratios maintained by hotel REITs, given the mandatory dividend payouts such firms are legally required to make, are to be expected. Table 1 shows no pattern of increase or decrease in cash-holding levels throughout the sampled period.
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<table>
<thead>
<tr>
<th>Year</th>
<th>Obs.</th>
<th>Mean</th>
<th>STD</th>
<th>Minimum</th>
<th>Median</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>13</td>
<td>0.0257</td>
<td>0.0274</td>
<td>0.0060</td>
<td>0.0208</td>
<td>0.1072</td>
</tr>
<tr>
<td>2006</td>
<td>12</td>
<td>0.0357</td>
<td>0.0364</td>
<td>0.0066</td>
<td>0.0265</td>
<td>0.1398</td>
</tr>
<tr>
<td>2007</td>
<td>12</td>
<td>0.0268</td>
<td>0.0146</td>
<td>0.0037</td>
<td>0.0301</td>
<td>0.0468</td>
</tr>
<tr>
<td>2008</td>
<td>13</td>
<td>0.0308</td>
<td>0.0239</td>
<td>0.0022</td>
<td>0.0238</td>
<td>0.0785</td>
</tr>
<tr>
<td>2009</td>
<td>13</td>
<td>0.0563</td>
<td>0.0515</td>
<td>0.0016</td>
<td>0.0274</td>
<td>0.1582</td>
</tr>
<tr>
<td>2010</td>
<td>13</td>
<td>0.0501</td>
<td>0.0412</td>
<td>0.0009</td>
<td>0.0525</td>
<td>0.1371</td>
</tr>
<tr>
<td>2011</td>
<td>13</td>
<td>0.0409</td>
<td>0.0261</td>
<td>0.0013</td>
<td>0.0409</td>
<td>0.0741</td>
</tr>
<tr>
<td>2012</td>
<td>13</td>
<td>0.0397</td>
<td>0.0248</td>
<td>0.0036</td>
<td>0.0362</td>
<td>0.0781</td>
</tr>
<tr>
<td>2013</td>
<td>14</td>
<td>0.0410</td>
<td>0.0266</td>
<td>0.0003</td>
<td>0.0454</td>
<td>0.0767</td>
</tr>
<tr>
<td>2014</td>
<td>11</td>
<td>0.0595</td>
<td>0.0595</td>
<td>0.0077</td>
<td>0.0560</td>
<td>0.1448</td>
</tr>
<tr>
<td>Total</td>
<td>127</td>
<td>0.0405</td>
<td>0.0335</td>
<td>0.0003</td>
<td>0.0331</td>
<td>0.1582</td>
</tr>
</tbody>
</table>

Note: Cash-holding level was measured by the ratio of the ratio of cash and marketable securities to total assets (CASH). The sample includes a total of 127 firm-year observations from 20 hotel REITs over the period 2005-2014.

2. Descriptive statistics

Descriptive statistics for all study variables are presented in Table 2. One of the key points displayed is the mean cash ratio of 4.05% with its 3.35% standard deviation, showing that hotel REITs have on hand cash and marketable securities equal to 4.05% of their total assets. There is substantial variance among the sampled REITs as, on average, total assets of $2,771.98 million produce a standard deviation of $3,128.77 million. As the mean level of leverage turns out to be 61.65%, it is clear that hotel REITs are more dependent on debt than on equity for financing. The overall mean market-to-book ratio (MTBR) is 1.1107, indicating that the hotel REITs sampled had relatively good growth prospects during the sample period. The mean value of CF, at 0.0019, reveals that, in an average firm, the earnings before extraordinary items plus depreciation and amortization is about 0.2% of total assets. Finally, CFV is distributed with a mean of 1.97% and a median value of 1.30%.
3. Results of correlation analysis

Pair-wise Pearson correlations were run before the WLS regression model to check for associations between the cash ratio(CASH) and each independent variable. Table 3 presents the correlation matrix for all of these variables. The results of the correlation analysis support many of the study’s hypotheses. Cash ratio(CASH) is significantly and negatively associated with TA and CF but positively and significantly correlated with LEV and MTBR. On the other hand, cash ratio(CASH) appears to have a positive correlation with CFV, although their correlation is not statistically significant at the 0.05 level.

<table>
<thead>
<tr>
<th>Table 2</th>
<th>Descriptive Statistics of Study Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
<td>N</td>
</tr>
<tr>
<td>CASH</td>
<td>127</td>
</tr>
<tr>
<td>TA($million)</td>
<td>127</td>
</tr>
<tr>
<td>LEV</td>
<td>127</td>
</tr>
<tr>
<td>MTBR</td>
<td>127</td>
</tr>
<tr>
<td>CF</td>
<td>127</td>
</tr>
<tr>
<td>CFV</td>
<td>127</td>
</tr>
</tbody>
</table>

Note: CASH, the ratio of cash and marketable securities to total assets; TA, total assets; LEV, the ratio of total liabilities to total assets; MTBR, the ratio of book value of total assets minus the book value of equity plus the market value of equity to book value of total assets; CF, the ratio of earnings before extraordinary items plus depreciation and amortization to total assets; CFV, the ratio of the standard deviation of cash flow over the previous three-year period to total assets.

<table>
<thead>
<tr>
<th>Table 3</th>
<th>Pearson Correlation Matrix</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CASH</td>
</tr>
<tr>
<td>CASH</td>
<td>1</td>
</tr>
<tr>
<td>TA</td>
<td>-0.342**</td>
</tr>
<tr>
<td>LEV</td>
<td>0.237**</td>
</tr>
<tr>
<td>MTBR</td>
<td>0.245**</td>
</tr>
<tr>
<td>CF</td>
<td>-0.196*</td>
</tr>
<tr>
<td>CFV</td>
<td>0.171</td>
</tr>
</tbody>
</table>

Note: CASH, the ratio of the ratio of cash and marketable securities to total assets(in natural logarithm); TA, total assets(in natural logarithm); LEV, the ratio of total liabilities to total assets; MTBR, the ratio of book value of total assets minus the book value of equity plus the market value of equity to book value of total assets; CF, the ratio of earnings before extraordinary items plus depreciation and amortization to total assets; CFV, the ratio of the standard deviation of cash flow over the previous three-year period to total assets. *Significant at the 0.05 level; **Significant at the 0.01 level.
4. Results of the WLS regression

As touched on earlier, the specter of heteroskedasticity haunts any study running an OLS regression on cross-sectional data. Recognizing that potentiality, White’s (1980) test was run to check for heteroskedasticity in the OLS regression model, revealing a chi-square value for the OLS regression model of 18.29(p<0.000, \(\chi^2\) 25%= 11.07, df=5). This finding rejects the null hypothesis of homoscedasticity at the 0.05 level of significance. White’s test thus showed that a WLS regression was needed to counterbalance heteroskedasticity in the analysis.

Table 4 provides the results from that WLS regression. With an F value of 32.332, the WLS regression was statistically significant at the 0.01 level. Some 55.4% of cross-firm variations in hotel REIT cash-holding levels were, given the model’s adjusted R-square of 0.554, effectively explained by the model. There was no problem with multicollinearity as the maximum variation inflation factors(VIFs) value linking the five independent variables was much lower than 10.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>t-statistic</th>
<th>Significance</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-7.378</td>
<td>-14.529</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>TA</td>
<td>-0.247</td>
<td>-6.242**</td>
<td>0.000</td>
<td>3.144</td>
</tr>
<tr>
<td>LEV</td>
<td>1.355</td>
<td>3.358**</td>
<td>0.001</td>
<td>3.021</td>
</tr>
<tr>
<td>MTBR</td>
<td>1.087</td>
<td>5.753**</td>
<td>0.000</td>
<td>1.339</td>
</tr>
<tr>
<td>CF</td>
<td>-4.188</td>
<td>-3.236**</td>
<td>0.002</td>
<td>2.716</td>
</tr>
<tr>
<td>CFV</td>
<td>0.551</td>
<td>2.161*</td>
<td>0.033</td>
<td>1.189</td>
</tr>
</tbody>
</table>

Observations=127
Adjusted R-square=0.554
Model F=32.332**

Note: CASH, the ratio of cash and marketable securities to total assets(in natural logarithm); TA, total assets(in natural logarithm); LEV, the ratio of total liabilities to total assets; MTBR, the ratio of book value of total assets minus the book value of equity plus the market value of equity to book value of total assets; CF, the ratio of earnings before extraordinary items plus depreciation and amortization to total assets; CFV, the ratio of the standard deviation of cash flow over the previous three-year period to total assets. *Significant at the 0.05 level; **Significant at the 0.01 level.

The results of the t-statistics associated with the five independent variables show that TA, LEV, MTBR, CF, and CFV are all statistically significant at the 0.05 level or greater. The negative coefficients of TA and CF indicate that cash holdings are negatively affected
by total assets and cash flow. The positive coefficients of LEV, MTBR, and CFV show that leverage, investment opportunities, and cash-flow volatility exert a positive impact on cash holdings.

V. Discussion

In line with the study hypotheses, the significant and negative coefficient of TA in the WLS regression model indicates that large hotel REITs are more likely to hold lower levels of cash and marketable securities. This finding supports the transaction motive as an explanation of cash holdings, suggesting that as economies of scale affect transaction costs, large firms need to hold less cash (Miller & Orr, 1966). The finding is also consistent with the view that larger firms tend to hold less cash because they are more likely to have established relationships with friendly lenders and lower bankruptcy risks (Fazzari & Petersen, 1993; Kim et al., 1998; Kim et al., 2011; Ozkan & Ozkan, 2004). Additionally, the findings support Titman and Wessels's (1998) argument that larger firms tend to have less drastic impulses to hold cash as a means of avoiding financial distress. For large hotel REIT firms, assets are invested, directly and indirectly, in diverse hotel real estate properties and mortgages spanning multiple geographical areas, and as a result they enjoy a lower probability of experiencing financial distress and less volatile cash flows. It is likely that all of these factors motivate large hotel REITs to hold less cash and marketable securities.

This study hypothesized that hotel REITs with higher leverage would show lower cash holdings; however, this prediction is not consistent with the study's findings. The significant and positive coefficient for LEV suggests that debt financing exerts a positive influence on the cash holdings of hotel REITs. This result undercuts the argument that leverage can increase a firm's access to capital markets by disciplining managers, reducing agency problems caused by the free cash flow problem and enhancing transparency (Hardin et al., 2009). As previous empirical studies have often found contrasting results for the effects of leverage on cash holdings, this discrepancy is not surprising. The contrasting results are very likely due to the industry's debt-inclined financing, as shown by its average debt ratio (LEV) of 0.6165. For hotel REITs facing the effects of a financial crisis that peaked in 2008 who find themselves still struggling through more recent tough market
conditions, higher leverage may encourage the holding of as much cash as legally possible to mitigate the expected costs of liquidity constraints while reducing bankruptcy risks. Moreover, since any firm with a zero effective tax rate ends up with negative tax gain from corporate borrowing (Howe & Shilling, 1988), non-tax-paying hotel REITs should be fully aware of the disadvantages of debt when they desire to increase the amount of debt in their capital structures. Consequently, heavily levered hotel REITs should be expected to hold more cash and marketable securities to reduce their higher default and bankruptcy risks. Cash holdings can also act as a safety cushion when those hotel REITs face unexpected losses and financial constraints.

In this study, as expected, the effect of MTBR on cash holdings was found to be significant and positive, suggesting that investment opportunities encourage hotel REITs to hold precautionary cash. This finding lends support to Hardin et al.’s (2009) proposition, which explains greater cash holdings by firms rich in investment opportunities as insurance against forgone opportunities that would be caused by shortages in liquid assets. This is also in the line with the prediction that firms with better investment opportunities prefer to hold more retained earnings as internal equity due to the expensive flotation costs associated with raising external funds (Holder et al., 1998) and the costs associated with information asymmetry when raising new equity in the capital market (Myers & Majluf, 1984). Additionally, this finding supports the precautionary motive for cash holdings by suggesting that firms with greater investment opportunities tend to hold more cash and marketable securities because adverse shocks and financial distress are more costly for them (Bates et al., 2009). Accordingly, as a consequence of the legal limitations on hotel REIT firms’ ability to retain internally generated funds (given their required dividend distributions), hotel REITs should be forced to hold more cash and marketable securities because the costs for external financing are substantially higher for such firms.

This study hypothesized a negative relationship between cash flow and cash holdings. The negative and significant coefficient of CF in the WLS regression model suggests that hotel REITs with higher cash flows accumulated less cash and marketable securities, confirming the stated hypotheses and coordinating with the empirical findings of Hardin et al. (2009). This is also consistent with Kim et al.’s (1998) view that the firms that have higher cash flows are expected to hold smaller amount of cash because those cash flows can serve as a cash substitute. Because asymmetric information and agency problems are a
source of significant financing costs, greater cash flows from operations send positive signals to the capital markets and increase borrowing power, so hotel REITs with greater cash flows from operations have a reduced precautionary motive for holding cash.

Cash-flow volatility exerts a positive impact on hotel REITs’ cash holdings. The significant and positive coefficient of CFV in the WLS regression model confirmed that hotel REITs with greater cash-flow risk hold more precautionary cash. This finding is consistent with the study’s hypothesis and reflects the previous empirical findings in studies of non-REIT firms by Bates et al.(2009) and Opler et al.(1999). The results also are supportive of Ferreira and Vilela’s(2004) argument that firms with more volatile cash flows tend to hold more cash to reduce the probability of experiencing cash shortages due to unexpected cash-flow deterioration. It is evident that hotel REITs facing frequent cash-flow shortfalls have over the years increased their cash holdings in order to reduce their financing costs.

VI. Conclusions, Implications, and Suggestions for Future Studies

Firm size, leverage, investment opportunities, operations-derived cash flows, and cash-flow volatility have long been implicated as drivers of cash holdings, even as empiricists failed to agree on their precise effects. By targeting those variables and using them to deduce the roles played by the precautionary and transaction motives in hotel REITs’ cash holdings, this study attempted to pin down how cash-holding behavior is driven. With its WLS regression model showing these five independent variables were all significant factors affecting hotel REITs’ cash holdings, the study achieved its essential aims. The results provide that greater investment opportunities, higher leverage, and greater cash-flow volatility drove hotel REITs to hold more cash and marketable securities, and that larger hotel REITs with higher cash-flow levels were more likely to amass smaller cash holdings and fewer marketable securities.

These findings make clear the prominence of both the precautionary and transaction motives in hotel REITs’ cash-holding policies. First, hotel REITs(which exist, after all, as investment vehicles) held more cash as they became sensitive to impending investment opportunities, showing the precautionary motive—and its included notion of a trade-off
between cash and opportunities for growth—at work. At the same time, hotel REITs with higher cash flows stockpiled less cash and marketable securities: having a steady influx of funds meant those firms did not have to save up that precautionary cash. Hotel REITs in the sample that had these more robust cash flows could quickly and cheaply tap into those revenues for financing of future projects. Yet if these cash flows become volatile, their lack of predictability will undercut managerial confidence. Managers in such a situation have a strong precautionary desire for stockpiled cash to see them through periods when cash flows from operations decline. As the hotel REITs in our sample amassed greater cash and marketable securities when their cash flows were more volatile, the precautionary motive for cash holding was evident in hotel REIT decision-making.

The fact that larger hotel REITs, (i.e., those with greater total assets to be divested or put up as collateral should external financing be required), held less cash because they did not anticipate difficulty accessing lending if needed and could expect to get such lending on reasonable terms. The availability of credit is hence inversely related to the stockpiling of cash. As has long been expected in this field, transaction costs go down as borrowing capacity goes up, motivating large hotel REITs with more stable lender relationships to eschew cash as an unnecessary expense. A final point evincing the precautionary motive’s role appears in the empirical results showing hotel REITs building up higher cash reserves as a corollary to greater debt financing. Such higher debt ratios tend to motivate greater cash holdings as cash may be needed to clear debt servicing. Hence, both the precautionary and transaction motives for cash holdings were very evident drivers of the cash holdings of the hotel REIT firms sampled, with cash on hand being held as a buffer against unforeseen risks and unforeseen need.

For hotel REIT managers who perceive a need for increased cash on hand, and for the investors those managers work for, this study’s clear delineation of the drivers of cash holding in the hotel REIT sector has tremendous practical benefit. Hospitality investors put their money into hotel REITs with the foreknowledge that ninety cents from every dollar of profit is guaranteed to be returned in the form of dividends. Such dividend-prioritizing investors would be justly concerned if they suspected their REIT managers of following the larger American corporate trend to amass huge stockpiles of ready cash. By framing investor communications around the legitimate precautionary and transactionary requirements for increased funds documented in this study, hotel REIT managers can show their cash
holdings are both reasonably motivated and in line with the behavior of hotel REITs generally. Such a showing will reduce agency problems while leaving managers free to prepare for growth opportunities, boosting firm value on two fronts.

This study’s limitations should be noted, as should several opportunities for future research. Most notably, this paper focused strictly on the precautionary and transaction motives, so it is not a broad examination of all cash-holding phenomena. At least one prior paper (Bates et al., 2009) suggests tax and agency motives are also vital to understanding cash holdings; these warrant further investigation in the unique context of hotel REITs. Another fascinating field open for study is that of hotel REIT firm governance, as managerial independence is almost certainly tied strongly to cash-holding behavior. A key limitation is the ten-year period (2005-2014) examined in this study, a block of time that includes the recession from 2008 to 2013. Market-cycle effects on cash holdings are entirely plausible, but such effects were not controlled for in this study. An investigation contrasting recessionary and non-recessionary cash-holding decisions in the hotel REIT industry would be illuminating. Furthermore, cash holdings carry with them an opportunity cost in the form of lost investment income and possibly reductions in shareholder goodwill. Theoretically, hotel REITs take on these costs because held cash reserves allow them to cope with key financial constraints. A study of the systematic interactions between financial constraints and cash-holding behavior, therefore, would have significant research value. Finally, a study comparing cash-holding determinants between Korea-based and US-based hotel REITs could be very enlightening.

References

The Precautionary and Transaction Motives for Cash Reserves


현금보유에 대한 예비적 동기와 거래적 동기
- 호텔 부동산투자신탁기업에 대한 연구*

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요 약

본 연구는 예비적 동기와 거래적 동기가 호텔 부동산투자신탁기업의 현금보유를 설명하는데 중요한 역할을 하는지를 검증하였다. 현금보유에 대한 이들 동기들의 역할을 실험적으로 검증하기 위해, 본 연구는 호텔 부동산투자신탁기업들의 현금보수수준에 대한 기업규모, 레버리지, 투자기회, 현금흐름 및 현금보수수준의 변동과의 영향을 파악하였 다. 2005년부터 2014년까지 미국 자본시장에 상장된 20개의 호텔 부동산투자신탁기업들의 패널데이터에 기초한 가중최소제곱 회귀분석 결과, 적은 현금 및 시장성 유가 증권을 보유한 호텔 부동산투자신탁기업은 기업규모가 크고 영업상 현금흐름이 높은 반면, 많은 현금 및 시장성 유가증권을 보유한 호텔 부동산투자신탁기업은 레버리지가 높고 투자기회가 많으며 영업상 현금흐름이 현금보수수준에 대한 변동성이 높은 것으로 나타났 다. 이는 예비적 동기와 거래적 동기가 호텔 부동산투자신탁기업들의 현금보유 의사결정에 대한 주요 동력을 시사하는 결과이다.

주제어: 현금보유, 현금보수수준, 호텔 부동산투자신탁기업, 예비적 동기, 교환상충이론, 거래적 동기

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