

# Cash Holdings and Firm Performance in the Restaurant Industry

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*This study explores the link between cash holdings and performance outcomes in public restaurant companies in the United States, leveraging the critical role played by the industry context. We hypothesize that cash holdings have positive associations with both short-term and long-term firm performance in the restaurant industry. Our empirical analyses, based on fixed-effect regression models that control for all time-invariant variables, reveal that holding cash can improve performance in the restaurant industry, in support of our hypotheses.*

*Keywords: cash holdings, industry context, firm performance*

## INTRODUCTION

Even before the COVID-19 pandemic, the restaurant industry was widely recognized for its high failure rates, a fact that has become even more apparent in the wake of the pandemic. In 2016, the U.S. restaurant industry employed 14.7 million workers, but by 2021, that number had fallen to 11.2 million (Statista, 2022). The National Restaurant Association (2022) reports that the industry will face even more intense pressures and competition in the year ahead from rising inflation, elevated labor and food costs, and soaring energy/utility bills, and most restaurants do not expect their profitability to improve in 2023. In 2019, Jamie Oliver's restaurant group declared bankruptcy. Burger King, the 7,300-unit fast food chain, announced that 200 to 250 low-volume locations will be closed per year over the next couple of years. Applebee's Restaurants LLC. closed 46 restaurants in 2016, 99 in 2017, and 80 in 2018. Given a severe and persistently challenging operating environment, running a successful restaurant business is not an easy task.

The high failure rate has long been a concern, with researchers and practitioners alike searching for ways to improve the odds of success. One question that has remained largely unanswered in previous literature: Can having cash reserves help restaurant companies succeed? As an effective test, we analyze

the relationship between cash holdings and firm performance in the restaurant industry. According to behavioral theory of the firm (Cyert and March, 1963), holding enough cash as a buffer that allows them to counter external threats may help to enhance performance. Indeed, previous researchers found that companies with enough cash reserves can increase their values by mitigating transaction costs by not having to liquidate assets and avoiding underinvestment (Keynes, 1936, Bromiley, 1991; Nohria and Gulati, 1996; Duchin 2010; Kim and Bettis, 2014; La Rocca and Cambrea, 2019). These findings suggest that a firm can minimize risk and increase performance by managing cash holdings effectively.

While prior research has suggested that holding cash improves firm performance, empirical findings have been inconsistent. A substantial body of literature documents a negative and detrimental relationship between cash holdings and firm performance (Jensen and Meckling, 1976; Fama, 1980; Phan and Hill, 1995; Deephouse and Wiseman, 2000; Harford et al., 2008; Louis et al., 2012) and supports an inverted “U” shaped relationship (Tan and Peng, 2003). In academia, scholars have tried to answer this ambiguity for a long time. Deb et al. (2017) suggest that “context may shape the performance consequences of cash”. In addition, Daniel et al. (2004) argue that single industry samples may minimize the controversy on the performance implications of cash holdings. Given the critical role of context, this study examines the relationship between cash holdings and firm performance in the context of publicly listed U.S. restaurant operators, using fixed-effect regression models that account for all time-invariant variables.

The empirical results of our study provide evidence that cash holdings have a significant positive effect on firm performance over both the short- and the long-term, indicating that cash reserves can be an important factor in achieving success. Overall, our findings indicate that cash holdings can enhance both short-term and long-term financial performance in the restaurant industry, in line with our hypotheses.

This study offers important contributions to the existing literature. Cash-performance implication studies have mainly focused on publicly listed companies in the U.S. and have largely ignored the industry-specific characteristics. This leaves a gap in the understanding of scholars and practitioners of how the role of cash holdings in the restaurant sector may differ from that in other industries, and the way in which such holdings affect the performance of restaurant operators tends to show a uniquely high sensitivity to changes in the economy (Guillet and Mattila, 2010), a high level of fixed assets (Ryu and Jang, 2006), a low level of cash holdings (Kim et al., 2011; Kusnadi, 2011), as well as thin profit margins and fierce competition (Kim et al., 2018). It is important to explore different industry contexts to substantiate whether the previous findings can be generalizable. Identifying the relationship between cash holdings and firm performance in the restaurant industry may address some of the controversies in the literature.

Our research also adds to the accounting literature regarding cash holdings in that high cash holdings are associated with poor accruals quality (García-Teruel et al., 2009), aggressive real activities management (Greiner, 2017), poor earnings quality (Sun et al., 2012), lower levels of financial statement comparability (Habib et al., 2017) and lower shareholder value (Lee and Powell, 2011). In contrast to the negative stance that some accounting scholars have taken towards cash holdings, our research reveals that these reserves can be beneficial to performance in the restaurant sector, highlighting the importance of taking industry context into account when examining the relationship between cash holdings and firm performance.

In addition, this study investigates the impact of cash holdings on both short-term financial performance using profit numbers and earnings per share (EPS), and long-term financial performance using market value-added (MVA), to provide more comprehensive and industry-specific picture. In previous studies, researchers have often used Tobin’s Q to evaluate a firm’s value (Smith and Watts, 1992; Pava and Krausz, 1996; Kaplan and Zingales, 1997; Garcia-Castro et al., 2010; Gil et al., 2021). Given that most prior studies have focused on either short-term or long-term firm value, our findings offer valuable empirical addition to the cash holdings and firm performance literature.

In the following section, we review the literature on cash holdings and firm performance on which the development of hypothesis is based. Then, Section 3 covers the data, variables, and model specifications. Sections 4 and 5 provide the empirical results, implications, and concluding remarks.

## LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

In a perfect market, holding large amounts of cash would be irrelevant in maximizing the firm value (Modigliani and Miller, 1958) because external financing would be readily available at a reasonable cost, and there would be no need to accumulate cash holdings to prepare for unforeseen events. This is not the case in the real world. According to the pecking order theory (Myers and Majluf, 1984), managers follow a pecking order of investments due to the information asymmetry between insiders and outsiders; they tend to favor financing investments with internal funds first, then with debt, and finally with equity, as internally generated capital is considered a less costly option than externally raised capital. Therefore, firms carrying large cash reserves can avoid raising expensive external capital (Myers and Majluf, 1984; Opler et al., 1999; Bates et al., 2009; Denis and Sibilkov, 2010; Harford et al., 2014) and are able to take advantage of positive net present value (NPV) projects (Myers, 1977; Opler et al., 1999; Ozkan and Ozkan, 2004; Chen and Chuang, 2009) which will improve their financial performance.

Several studies have shown that cash holdings are positively associated with company performance. For example, Bolton and Scharfstein (1990) argue that cash-rich firms drive their competitors that have limited access to external financing out of business; one way of doing this is to increase their production output to drive down prices, and therefore margins. Fresard (2010) shows that firms with large cash reserves can achieve a better return on assets (ROA) and market value since they can use excess cash to finance competitive strategies, such as hiring more productive workers, constructing efficient distribution networks, and spending on advertising. Faulkender and Wang (2006) confirm the positive relationship between cash holdings and market-to-book ratio, while Deb et al (2017) find that cash-rich companies utilize their cash to acquire key competitors to increase their market share. They can also use cash to support innovation, which boosts corporate value in highly competitive and research-intensive industries.

On the other hand, several studies have supported the negative perspective that certain scholars have adopted with respect to cash holdings. Referencing the free cash flow theory, Jensen (1986) argues that, in the presence of a conflict between managers and shareholders, holding excessive cash may create managerial incentives to gain discretionary power over financing and investment decision, potentially leading to investments in unprofitable projects and creating less wealth for shareholders (Dittmar et al., 2003; Jensen, 1986; Opler et al., 1999; Pinkowitz, Stulz, and Williamson, 2006). In addition, high cash holdings are associated with poor accruals quality (García-Teruel et al., 2009), aggressive real activities management (Greiner, 2017), poor earnings quality (Sun et al., 2012), lower levels of financial statement comparability (Habib et al., 2017) and lower shareholder value (Lee and Powell, 2011). Wang (2002) supports the negative effect of cash holdings on profitability by drawing on Japanese and Taiwanese data from 1985 to 1996. Raheman and Nasr (2007) find a negative relationship between liquid assets and profitability using a sample of 94 Pakistani firms.

Some of these conflicting findings may be attributed to researchers failing to control for the industry effect. Daniel et al. (2004) argue that single industry samples may minimize the controversy on the performance implications of cash holdings. Therefore, this study attempts to reconcile these contradictory results by using a single industry sample.

According to the literature, the cost of external capital varies greatly across industries (Dogru and Upneja, 2019; Chen and Wang, 2012; Ozdemir et al., 2013). The restaurant industry is well known for facing high failure risks (Ozdemir et al., 2013), and Parsa et al. (2005) showed that 26 percent of independent restaurants fail in their first year of operation. The overall failure rate for franchised chains was 57 percent, and 61 percent for independent restaurants; this can be a result of intense competition, thin profit margins, high wages, and difficulties in predicting consumer spending trends. Scholtens (1999) argues that riskier companies find it relatively difficult to signal their creditworthiness to lenders, which results in a higher cost of external capital. Therefore, external financing is costly for the restaurant industry.

Restaurants require substantial capital and operating expenditure for real estate and periodic refurbishments and maintenance to sustain their on-going business (Dogru and Upneja, 2019). Indeed, previous studies have noted that the restaurant industry is one of the sectors with the lowest cash holdings (Kim et al., 2011; Kusnadi, 2011), even though restaurant operators must have enough cash to prepare for

unexpected events and to take advantage of positive NPV investment opportunities. Thus, we expect that cash holdings will enhance both short-term and long-term performance. The following hypotheses are proposed.

*H1: There is a positive relationship between cash holdings and short-term performance in the restaurant industry.*

*H2: There is a positive relationship between cash holdings and long-term performance in the restaurant industry.*

## METHODOLOGY

### Data Collection

Our study analyzes a sample of publicly listed U.S. restaurant companies with Standard Industrial Classification (SIC) codes 5400 and 5812. After compiling the data using COMPUSTAT and annual reports, our empirical analyses include a total of 341 firm observations covering an unbalanced panel of 22 publicly listed restaurant companies from 2001 to 2016.

### Variables

To measure short-term performance, we use the gross profit and EPS data reported in the COMPUSTAT database. According to Hayes and Abernathy (1980), measures of performance such as EPS, ROA, return on equity (ROE) and gross profit are appropriate when examining short-term firm performance.

For long-term performance, we adopt the MVA as dependent variable, rather than any of the alternatives, such as Tobin's Q, because we can thereby avoid subjective accounting issues like asset valuation (Bentson, 1982; Watts and Zimmerman, 1990; Hillman and Keim 2001). The MVA formula is  $MVA = \text{market value} - \text{capital}$ , where market value represents the equity market value of the company and capital is the summation of the debt and the equity invested in the company.

To measure our independent variable, cash, we use the cash and cash equivalent reported in the COMPUSTAT database and the annual reports. We also include two control variables, namely firm size and financial leverage. Firm size, estimated as the log of assets, is frequently used to control for any systematic effects driven by size (Gelles and Mitchell, 1996; Assaf et al., 2017) while financial leverage is incorporated to control for the effect of the capital structure on performance. Several studies (Lee et al., 2013; Kang et al., 2010) suggest that a higher leverage ratio can improve firm performance through the tax shield effect. A leverage ratio is measured as total debt divided by total assets.

### Regression Models

We adopt panel regression analysis to examine the relationship between cash holdings and short- and long-term performance. Three separate panel regressions are employed; the first and the second model to measure short-term performance and the third to measure long-term performance. For each regression model, the Hausman specification test is utilized to confirm whether a fixed-effects model or a random-effects model is appropriate. For all three models, the fixed-effects model is appropriate with a p-value of 0. We use robust standard error to control for the potential presence of heteroscedasticity. Hence, the three equations for panel estimation can be written as:

$$Profit_{it} = \alpha_0 + \alpha_1 Cash_{it} + \alpha_2 Size_{it} + \alpha_3 Lev_{it} + \varepsilon_{it} \quad (1)$$

$$EPS_{it} = \alpha_0 + \alpha_1 Cash_{it} + \alpha_2 Size_{it} + \alpha_3 Lev_{it} + \varepsilon_{it} \quad (2)$$

$$MVA_{it} = \alpha_0 + \alpha_1 Cash_{it} + \alpha_2 Size_{it} + \alpha_3 Lev_{it} + \varepsilon_{it} \quad (3)$$

where Profit and EPS represent a short-term firm performance; MVA represents a long-term firm performance; Cash represents cash holdings, measured by cash and cash equivalents; Size is measured by the log of assets; Lev is financial leverage, measured as total debt divided by total assets;  $\epsilon$  stands for error terms; and  $i$  and  $t$  represent individual firm observations and a calendar year, respectively.

## RESULTS

### Descriptive Statistics

Table 1 reports the summary of the descriptive statistics for all variables. The mean value of Profit is 985.21 with a minimum of 5.53 and a maximum of 12401. The mean value of EPS is 1.37, with a minimum of -2.6 and a maximum of 6.85. The mean value of MVA is 3906.85, with a minimum of -3577.8 and a maximum of 71968.8. The mean value of Cash is 221.79 with a minimum of 0.87 and a maximum of 7685.5. Size ranges from 1.48 to 4.58, with a mean value of 2.97. Lev ranges from 0.14 to 4.07, with a mean value of 0.67.

**TABLE 1**  
**DESCRIPTIVE STATISTICS**

<i>Variable</i>	<i>n</i>	<i>Mean</i>	<i>S.D</i>	<i>Min</i>	<i>Max</i>
<i>Profit</i>	341	985.21	2158.0	5.53	12401
<i>EPS</i>	341	1.37	1.42	-2.6	6.85
<i>MVA</i>	341	3906.8	11754	-3577.8	71968
<i>Cash</i>	341	221.79	644.74	.87	7685.5
<i>Size</i>	341	2.97	.59	1.48	4.58
<i>Lev</i>	341	.67	.60	.14	4.07

*Note: Profit and EPS represent a short-term firm performance; MVA represents a long-term firm performance; Cash represents cash holdings, measured by cash and cash equivalents; Size is measured by the log of assets; Lev is financial leverage, measured as total debt divided by total assets.*

Table 2 illustrates Pearson's correlation of all variables in the model. Profit is significantly and positively correlated with EPS ( $r = 0.4695$ ), MVA ( $r = 0.8817$ ), Cash ( $r = 0.8087$ ), and Size ( $r = 0.7639$ ), but not with Lev ( $r = 0.0102$ ). EPS is significantly and positively correlated with MVA ( $r = 0.4236$ ), Cash ( $r = 0.3238$ ), Size ( $r = 0.4444$ ), but not with LEV ( $r = 0.0179$ ). MVA is significantly and positively correlated with Cash ( $r = 0.7958$ ), and Size ( $r = 0.6271$ ), but not with LEV ( $r = -0.0067$ ).

**TABLE 2**  
**PEARSON CORRELATION**

<i>Variable</i>	<i>Profit</i>	<i>EPS</i>	<i>MVA</i>	<i>Cash</i>	<i>Size</i>	<i>Lev</i>
<i>Profit</i>	1.000					
<i>EPS</i>	0.469**	1.000				
<i>MVA</i>	0.882**	0.424**	1.000			
<i>Cash</i>	0.809**	0.324**	0.796**	1.0000		
<i>Size</i>	0.764**	0.444**	0.627**	0.6146**	1.0000	
<i>Lev</i>	0.010	0.018	-0.007	-0.0202	0.0030	1.0000

*\*\* significant at the 0.05 level. Note: Profit and EPS represent a short-term firm performance; MVA represents a long-term firm performance; Cash represents cash holdings, measured by cash and cash equivalents; Size is measured by the log of assets; Lev is financial leverage, measured as total debt divided by total assets.*

## Main Results

Tables 3 and 4 report the results of Models 1 and 2, which present the parameter estimates and the associated z-values, where the dependent variables are the short-term performance, Profit, and EPS. The results in Table 3 show a significant positive link between cash holdings and profit. The results in Table 4 show a significant positive association between cash holdings and EPS. These two results support Hypothesis 1. Table 5 reports the results from Model 3, which presents the parameter estimates and the associated z-values, where the dependent variable is the long-term performance. The results show that cash holdings are significantly and positively related to MVA. This result supports Hypothesis 2.

**TABLE 3**  
**REGRESSION RESULTS OF MODEL 1**

Variable	Coefficients	z-value	p-value
<i>Dependent variable: Profit</i>			
Cash	0.929**	11.07	0.000
Size	1272.74**	9.08	0.000
Lev	59.46	0.46	0.646

\*\* Significant at the 5% level. Note: Profit represents a short-term firm performance; Cash represents cash holdings, measured by cash and cash equivalents; Size is measured by the log of assets; Lev is financial leverage, measured as total debt divided by total assets.

**TABLE 4**  
**REGRESSION RESULTS OF MODEL 2**

Variable	Coefficients	z-value	p-value
<i>Dependent variable: EPS</i>			
Cash	0.0002*	1.89	0.059
Size	1.43**	6.90	0.000
Lev	0.051	0.26	0.795

\*\*, \* Significant at the 5% and 10% levels, respectively. Note: EPS represents represent a short-term firm performance; Cash represents cash holdings, measured by cash and cash equivalents; Size is measured by the log of assets; Lev is financial leverage, measured as total debt divided by total assets.

**TABLE 5**  
**REGRESSION RESULTS OF MODEL 3**

Variable	Coefficients	z-value	p-value
<i>Dependent variable: MVA</i>			
Cash	10.09**	13.25	0.000
Size	5101.00**	4.86	0.000
Lev	485.73	0.54	0.590

\*\* Significant at the 5% level. Note: MVA represents a long-term firm performance; Cash represents cash holdings, measured by cash and cash equivalents; Size is measured by the log of assets; Lev is financial leverage, measured as total debt divided by total assets.

## CONCLUSION

This study explores the link between cash holdings and performance outcomes in publicly listed restaurant companies in the United States, leveraging the critical role played by the industry context. The restaurant industry is one of the sectors with the lowest cash holdings, and yet the highly competitive and dynamic environment suggests that having sufficient cash reserves is crucial in preparing for unexpected events and taking advantage of investment opportunities as they arise.

We hypothesize that cash holdings have positive associations with both short-term and long-term performance in the restaurant industry. Our empirical analyses, based on fixed-effect regression models that control for all time-invariant variables, reveal that holding cash can improve restaurant firm performance across all time frames, thereby supporting our hypotheses.

Our study contributes to the research on cash holdings by showing a positive relationship between cash holdings and firm performance in the specific industry context. Prior research has shown contradictory results between cash holdings and firm performance. This controversial empirical evidence highlights the need to explore such a relationship in one industry. To address this gap, our research focuses on a single industry sample, specifically the restaurant operators.

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