

# The Effect of Peer Firms on the Marginal Value of Cash Holdings: The Moderating Role of Firm Size and Market Competition<sup>1</sup>

Narges Hamidian<sup>2</sup>, Hasan Fattahi Nafchi<sup>3</sup>

Received: 2025/06/02

Accepted: 2026/01/05

Research Paper

## Abstract

Cash holdings can help firms manage risk, respond to unexpected events, and enhance financial flexibility. However, excessive cash balances may exacerbate agency problems and erode firm value. In cash-holding decisions, the behavior of peer firms plays a critical role, and this influence may be conditioned by firm size and the competitive environment. Peers are companies with similar industrial and technical structures that influence each other's performance. This study examines the effect of peer firms on the marginal value of cash holdings, with particular emphasis on the moderating roles of firm size and market competition. Our sample comprises 135 firms listed on the Tehran Stock Exchange over 2012–2023. Using linear regression models with year and industry fixed effects, the findings show that firms whose cash holdings fall below the industry peer average exhibit a significantly higher marginal value of an additional dollar of cash, consistent with information-based and competition-based theories. Moreover, the peer effect is stronger in larger firms and in less competitive markets. These findings not only enrich the theoretical literature but also offer practical guidance for managers seeking to optimize liquidity policies and for investors assessing cash-related opportunities and risks.

**Keywords:** Peer Effect, Marginal Value of Cash Holdings, Market Competition, Firm Size.

**JEL Classification:** M41.

---

1. doi: 10.22051/jera.2025.51390.3595

2. Assistant Professor of Accounting, Faculty of Administrative Sciences and Economics, University of Isfahan, Iran. (Corresponding Author). (n.hamidian@ase.ui.ac.ir).

3. Assistant Professor of Accounting, Faculty of Administrative Sciences and Economics, University of Isfahan, Iran. (h.fattahi@ase.ui.ac.ir).

## Introduction

Cash holdings constitute one of the most fundamental and vital resources of any business entity and play a key role in financial decision-making. Cash holding refers to the amount of cash readily available that can be easily used for investment in physical assets and for distributing dividends to investors (Gill & Shah, 2012). The marginal value of cash holdings is defined as the market value of one additional unit of cash obtained by the firm. In efficient and frictionless markets, where transaction costs are zero and information asymmetry does not exist, the marginal value of one rial or one dollar of cash for shareholders should be exactly equal to its nominal value (Pinkowitz & Williamson, 2006). However, in inefficient markets, the marginal value of holding one additional unit of cash is not necessarily equal to the cost incurred to obtain that unit of cash (Soukhakian et al; 2020).

Prior studies (Opler et al; 1999; Faulkender & Wang, 2006; Acharya et al; 2007; Foley et al; 2007; Dittmar & Mahrt-Smith, 2007; Lyandres & Palazzo, 2016) show that several factors, such as firm size, growth opportunities, leverage, dividend policy, corporate governance, and product market competition, affect the marginal value of cash holdings. Nevertheless, one important factor that may influence the marginal value of cash holdings and has received relatively little attention in the literature is peer effects. Peer firms are companies that share structural similarities in terms of industry affiliation and technological characteristics and can influence one another's performance. Such interactions may lead to convergence in financial and industrial strategies among firms (Duong et al; 2015; Machokoto et al; 2021).

Most studies on the marginal value of cash holdings focus on the level of cash holdings and the firm's relative position, while cash holdings among peer firms are often overlooked. Given the important role that peer firms play in shaping corporate policies, this gap in the literature appears to be particularly important (Leary & Roberts, 2014). Moreover, the critical role of cash holdings in influencing and responding to strategic interactions among peer firms warrants greater attention (Frésard, 2010; Hoberg et al; 2014; Zhuang et al; 2022).

By examining whether and how a firm's cash position relative to its peers matters for the value of its cash holdings, the present study seeks to address this research gap. In addition, it explores how firms subsequently manage their cash-holding decisions. Answering these questions not only provides new insights into the determinants of the marginal value of cash holdings, but also helps address an open empirical question raised by Leary and Roberts (2014), who ask whether imitative behavior is optimal from a value-enhancement perspective. It should be noted that a firm's liquidity

position relative to its industry peers may have a significant impact on the marginal value of cash holdings due to imitative behavior and strategic interactions among firms and their peers. Furthermore, empirical evidence suggests that smaller firms and firms operating in more competitive environments are more vulnerable to insufficient liquidity, as their access to capital markets is more costly. Consequently, peer effects on the marginal value of cash holdings are more pronounced in these firms (Zhuang et al; 2022).

The objective of the present study is to examine the effect of peer firms on the marginal value of cash holdings and to investigate the moderating roles of firm size and product market competition. Domestic studies on the marginal value of cash holdings have mainly focused on issues such as time variation in the marginal rate and marginal value of cash (Meshki Miavaghi & Sanyeei, 2015), persistent excess cash holdings and the marginal value of cash (Moradi et al; 2019), and managerial ability and the marginal value of cash (Soukhakian et al; 2020; Bodaghi et al; 2021).

In the area of peer firms, existing domestic research has examined topics such as the effect of accounting information comparability among peer firms on board compensation (Fattahi et al; 2021), peer firm performance and earnings management (Kordestani & Jafarisugh, 2022), and the moderating role of leader and young firms within an industry on the relationship between peer firm performance and corporate investment (Joodaki et al; 2023). However, the impact of peer firms on the marginal value of cash holdings has not yet been examined in domestic studies.

The present research is innovative in several respects. First, unlike most prior studies that focus primarily on firm-specific factors in explaining the marginal value of cash holdings, this study investigates the role of peer firms as an external, inter-organizational determinant of this value. By emphasizing inter-firm interactions, this approach fills an important gap in the domestic literature. Second, by focusing on the moderating variables of firm size and market competition, this study examines the conditions under which peer effects may be strengthened or weakened. Third, within the context of domestic research, no prior study has simultaneously examined the role of peer firms and structural moderating conditions in determining the marginal value of cash holdings. Accordingly, the findings of this study can contribute meaningfully to the enrichment of theories related to liquidity decisions and inter-firm interactions in emerging economies, particularly in the Iranian capital market.

The results of this research can assist managers in optimizing liquidity policies through benchmarking against peer firms and can provide investors with signals regarding firms' growth opportunities and financial conditions. The remainder of the paper is organized as follows: first, the theoretical background and empirical literature related to the hypotheses

are presented; next, the research methodology and findings are discussed; and finally, conclusions and research implications are provided.

### **Theoretical Background and Hypothesis Development**

Cash holdings provide firms with two main advantages. On the one hand, the availability of cash and cash equivalents prevents firms from being constrained in pursuing investment opportunities. On the other hand, when a firm's operations fail to generate sufficient cash flows to meet mandatory obligations, liquidity can mitigate the costs associated with financial distress (Opler et al; 1999; Lee et al; 2011). Prior studies examining the relationship between cash holdings and firm value have yielded mixed results. Some studies suggest that cash holdings can enhance firm value by reducing financing costs, lowering exposure to macroeconomic risks, and facilitating investment opportunities (Opler et al; 1999). Other studies indicate that cash holdings may reduce firm value through investments in high-risk, low-return projects and through managerial opportunism or misuse of resources (Wang et al; 2014).

A growing body of empirical research, including Kadzima et al. (2024), Zhuang et al. (2022), Chen et al. (2019), Leary and Roberts (2014), and Frésard (2010), documents the influence of peer firms on cash-holding policies and the marginal value of cash. These studies suggest that the relationship between cash holdings and firm value is also shaped by industry competitors and peer firms. Peer firms are companies operating within the same industry that share similar industrial and technological characteristics. As a result, imitation and benchmarking behavior are more prevalent among peer firms than among non-peer firms.

The decisions and strategies adopted by peer firms can influence the strategies and investment decisions of other firms within the same industry. This phenomenon is commonly referred to as the peer effect (Machokoto et al; 2021). Manski (1993) argues that peer firms and focal firms may make similar decisions because they operate in comparable markets and environments. Institutional factors such as industrial policies, government-imposed entry barriers, state subsidies, policy-directed loans, and tax incentives can further influence firms' resource allocation decisions and cash-holding policies. Consistent with this view, Joodaki et al. (2023) show that firms imitate the investment behavior of industry peers to infer strategic directions and optimal investment levels, thereby avoiding the costs associated with duplicative or inefficient operations.

Theories of imitation and peer behavior can generally be classified into two main categories. First, information-based theories posit that firms follow peers with superior information. Second, competition-based theories argue that firms imitate peers in order to preserve competitive advantages or to constrain competitive pressures (Lieberman & Asaba,

2006). The relationship between peer behavior and the marginal value of cash holdings can be explained through both theoretical perspectives.

According to information-based theory, although managers possess both private and public information, the cash policies of peer firms convey relevant and valuable signals because peer firms share common resources such as capital, managerial talent, and financial and investment opportunities. Consequently, holding less cash than peer firms may leave a firm with insufficient liquidity to support future growth or to buffer against adverse cash-flow shocks, particularly for firms with incomplete information about optimal cash-holding levels. Therefore, an incremental increase of one additional dollar of cash relative to industry peers may affect the marginal value of cash holdings (Zhuang et al; 2022; Chen et al; 2019).

From a competition-based perspective, given the strategic role of cash in product market competition, maintaining a lower level of cash holdings than the peer average may impair a firm's ability to compete and expand (Frésard, 2010). For example, a firm may be unable to finance competitive actions or rely on liquid assets to challenge rivals' profits through aggressive pricing strategies (Bolton & Scharfstein, 1990), thereby losing investment opportunities to competitors. Under this theory as well, firms that hold cash at levels below the industry peer average are expected to derive greater market value from holding additional cash in subsequent periods compared to their peer firms (Zhuang et al; 2022).

Based on the two theoretical perspectives discussed above, a firm's cash-holding position relative to its industry peers plays a critical role in determining the marginal value of cash holdings. Specifically, one dollar of cash held by firms whose cash holdings are below the industry peer average is valued significantly more than one dollar of cash held by firms with relatively higher cash balances than their peers. The underlying reason is that firms with relatively low cash holdings tend to imitate the cash-accumulation behavior of their industry peers. The additional liquidity accumulated in subsequent periods is then primarily deployed toward investment activities, which can ultimately enhance firm value.

This imitative behavior is particularly pronounced when firms are perceived as industry followers or when they operate in environments characterized by high uncertainty. In such settings, managers typically face substantial informational constraints and are therefore less confident about identifying the optimal level of cash holdings. Conducting direct and firm-specific analyses of optimal cash policies can be complex, costly, and time-consuming. Consequently, the cash-holding policies of peer firms serve as informative and credible

benchmarks. Under these conditions, and holding other factors constant, investors assign a higher value to each additional rial or dollar of cash held by firms whose cash holdings fall below the peer average than to those of firms that do not face such a relative cash shortfall.

Consistent with this argument, Zhuang et al. (2022) document that the value of one dollar of cash is significantly higher for firms whose cash holdings are below the peer average. In other words, increases in liquidity generate greater value for investors when firms start from a relatively low cash position compared to their peers. Similarly, Chen et al. (2019) show that the average level of peer cash holdings has a substantial influence on the cash-holding decisions of other firms within the same industry. They further demonstrate that firms with higher research and development expenditures exhibit a stronger propensity to imitate the cash policies of their competitors.

Drawing on these theoretical and empirical insights, it is expected that a firm's cash-holding level relative to that of its peers affects the marginal value of cash holdings. Accordingly, the first hypothesis is formulated as follows:

***Hypothesis 1:*** Firms whose cash holdings are below the average cash-holding level of their peer firms exhibit a higher marginal value of cash holdings (peer effect).

Product market competition constitutes another important factor shaping imitative behavior among industry peers with respect to cash-holding policies. In highly competitive product markets, the peer effect on the marginal value of cash holdings is expected to be amplified through several complementary mechanisms. From an information-based perspective, intense competition increases uncertainty regarding future liquidity needs and investment opportunities. As a result, firms rely more heavily on signals derived from the observed cash-holding behavior of their peers to reduce this uncertainty. Acharya et al. (2007) show that firms operating in competitive industries tend to maintain higher cash reserves to preserve financial flexibility and mitigate liquidity risk. When a firm aligns its cash policy with the collective pattern of its peers, capital markets interpret this behavior as evidence of prudent risk management, thereby assigning a higher marginal value to incremental increases in cash holdings. Leary and Roberts (2014) likewise emphasize that firms use peer behavior as a reference point for financial decision-making to alleviate information asymmetry and enhance the credibility of market signals. Consistent with these arguments, domestic evidence reported by Najafgholizadeh et al. (2019) indicates that greater product market competition is associated with a higher marginal value of cash holdings.

In addition, DiMaggio and Powell (1983), drawing on institutional isomorphism and dynamic competition theories, argue that firms operating in highly competitive environments face strong organizational and environmental pressures to conform to dominant industry norms, including liquidity management practices. For smaller or less established firms, imitation of industry leaders or successful peers becomes particularly critical, as deviations from prevailing norms are quickly interpreted by the market as signs of managerial weakness or elevated strategic risk, potentially undermining a firm's competitive position and legitimacy. Moreover, social learning theory suggests that managers confronted with uncertainty reduce decision-making risk by modeling their choices on the observed behavior of comparable firms (Ali-Rind et al; 2023).

Accordingly, for firms operating in highly competitive markets, changes in cash-holding levels that are aligned with peer trends are more strongly reflected in market valuations. As a result, the peer effect on the marginal value of cash holdings is intensified under conditions of high product market competition (Zhuang et al; 2022). Based on these arguments, the second hypothesis is stated as follows:

**Hypothesis 2:** The peer effect on the marginal value of cash holdings is stronger for firms operating in highly competitive markets than for firms operating in less competitive markets.

In the peer firm literature, firm size is widely recognized as an important factor in explaining imitative behavior and benchmarking among firms (Leary & Roberts, 2014; Chen et al; 2019; Zhuang et al; 2022). From an information-based perspective, smaller firms face greater information asymmetry due to lower disclosure transparency and more limited analyst coverage. As a result, investors rely more heavily on information conveyed by peer firms when evaluating the financial policies of smaller firms. Evidence from Leary and Roberts (2014) underscores that firms use peer performance as a mechanism to reduce informational uncertainty. Accordingly, for smaller firms, each incremental increase in cash holdings that aligns with the collective pattern of peer firms sends a stronger positive signal to the market and generates a higher marginal value of cash (Zhuang et al; 2022).

In addition, social learning theory suggests that under conditions of uncertainty, managers of smaller firms exhibit a stronger propensity to imitate group behavior in order to reduce the risks associated with independent decision-making (Kaustia & Rantala, 2015; Ali-Rind et al; 2023). Such imitative tendencies further reinforce the relevance of peer effects in shaping cash-holding decisions among smaller firms.

From a competition-based perspective, firms face heightened pressure to maintain their competitive position in product markets, implying that market competition plays a critical role in shaping corporate financial policies, including cash-holding decisions. Smaller firms, due to their more limited financial resources and weaker ability to absorb market shocks or exploit investment opportunities, are particularly vulnerable in competitive environments. These characteristics render cash-holding decisions a strategic concern for smaller firms. Within the peer-effect framework, deviations from the industry-average level of cash holdings may convey distinct signals to the market. For smaller firms, holding less cash than their peers may be interpreted as evidence of financial constraints or ineffective management, thereby reducing the marginal value of cash. In contrast, aligning cash holdings with peer norms can enhance investor confidence and increase the marginal value of cash.

Given the greater sensitivity of capital markets to the financial decisions of smaller firms, the peer effect on the marginal value of cash holdings is expected to be more pronounced for these firms (Zhuang et al; 2022; Leary & Roberts, 2014). Accordingly, the third hypothesis is formulated as follows:

**Hypothesis 3:** The peer effect on the marginal value of cash holdings is stronger for smaller firms than for larger firms.

### **Research Methodology**

The present study is an applied, descriptive–correlational research design. The statistical population consists of firms listed on the Tehran Stock Exchange over the period 2012–2023. The sample selection is subject to the following criteria: firms operating in banking, insurance, financial intermediation, and holding industries are excluded due to the fundamentally different nature of their operations; firms whose shares experienced trading suspensions exceeding six non-consecutive months are excluded; to ensure comparability of financial information, firms must have a fiscal year ending in March; firms must have been listed on the stock exchange prior to 2012 and remained listed through the end of 2023; the required data for constructing the study variables must be available; and each industry must include at least five firms. Applying these criteria results in a final sample of 135 firms across 11 industries listed on the Tehran Stock Exchange.

### **Empirical Models**

To test the study's hypotheses, regression models (1), (2), and (3) are employed, following the methodologies of Zhuang et al. (2022) and Faulkender and Wang (2006). Hypothesis 1 is examined using regression model (1). This model is based on the framework developed by Faulkender

and Wang (2006) to measure the marginal value of cash holdings<sup>1</sup> and is extended by incorporating a variable that captures firm  $i$ 's level of cash holdings relative to its industry peers.

According to Hypothesis 1, the coefficient  $\beta_{12}$  is expected to be positive and statistically significant. This coefficient captures the effect of a firm's relative cash-holding position vis-à-vis its peers on the marginal value of cash holdings.

$$R_{i,t} - R_{i,t}^p = \alpha + \beta_1 \Delta Cash_{i,t} + \beta_2 \Delta E_{i,t} + \beta_3 \Delta NA_{i,t} + \beta_4 \Delta I_{i,t} + \beta_5 \Delta D_{i,t} + \beta_6 Cash_{i,t-1} + \beta_7 L_{i,t} + \beta_8 NF_{i,t} + \beta_9 Cash_{i,t-1} \times \Delta Cash_{i,t} + \beta_{10} L_{i,t} \times \Delta Cash_{i,t} + \beta_{11} Belowpcash_{i,t-1} + \beta_{12} Belowpcash_{i,t-1} \times \Delta cash_{i,t} + \beta_{13} Year + \beta_{14} Industry + \varepsilon_{i,t} \quad (1)$$

Where  $R_{i,t} - R_{i,t}^p$  denotes excess stock returns;  $\Delta Cash$ , represents changes in cash holdings;  $\Delta E$ , denotes changes in net income;  $\Delta NA$ , refers to changes in total assets excluding cash;  $\Delta I$ , represents changes in interest expense;  $\Delta D$ , denotes changes in dividend payments;  $L$ , is financial leverage; and  $\Delta NF$ , captures net cash flows from financing activities. All variables, except excess stock returns and financial leverage, are scaled by the market value of equity at the end of the previous fiscal year. *Belowpcash* is an indicator capturing firm  $i$ 's level of cash holdings relative to its industry peers. *Year* and *Industry* denote year and industry fixed effects, respectively.

To test Hypothesis 2, regression model (2) is employed.

$$R_{i,t} - R_{i,t}^p = \alpha + \beta_1 \Delta Cash_{i,t} + \beta_2 \Delta E_{i,t} + \beta_3 \Delta NA_{i,t} + \beta_4 \Delta I_{i,t} + \beta_5 \Delta D_{i,t} + \beta_6 Cash_{i,t-1} + \beta_7 L_{i,t} + \beta_8 NF_{i,t} + \beta_9 Cash_{i,t-1} \times \Delta Cash_{i,t} + \beta_{10} L_{i,t} \times \Delta Cash_{i,t} + \beta_{11} Belowpcash_{i,t-1} + \beta_{12} Belowpcash_{i,t-1} \times \Delta cash_{i,t} + \beta_{13} D_{Low} + \beta_{14} Belowpcash_{i,t-1} \times \Delta cash_{i,t} \times D_{Low} + \beta_{15} Belowpcash_{i,t-1} \times \Delta cash_{i,t} \times D_{High} + \beta_{16} Year + \beta_{17} Industry + \varepsilon_{i,t} \quad (2)$$

Where  $D_{Low}$  is a dummy variable representing firms in low-competition markets, and  $D_{High}$  represents firms in high-competition markets. In regression model (2), Hypothesis 2 is not rejected if the coefficient on  $Belowpcash \times \Delta Cash \times D_{High}$  is positive and larger than that on  $Belowpcash \times \Delta Cash \times D_{Low}$ .

To test Hypothesis 3, regression model (3) is employed.

---

1. This model is described in detail in the section on the dependent variable

$$\begin{aligned}
R_{i,t} - R_{i,t}^p = & \alpha + \beta_1 \Delta \text{Cash}_{i,t} + \beta_2 \Delta E_{i,t} + \beta_3 \Delta \text{NA}_{i,t} + \beta_4 \Delta I_{i,t} + \\
& \beta_5 \Delta D_{i,t} + \beta_6 \text{Cash}_{i,t-1} + \beta_7 L_{i,t} + \beta_8 \text{NF}_{i,t} + \beta_9 \text{Cash}_{i,t-1} \times \\
& \Delta \text{Cash}_{i,t} + \beta_{10} L_{i,t} \times \Delta \text{Cash}_{i,t} + \beta_{11} \text{Belowpcash}_{i,t-1} + \\
& \beta_{12} \text{Belowpcash}_{i,t-1} \times \Delta \text{cash}_{i,t} + \beta_{13} D_{Low} + \beta_{14} \text{Belowpcash}_{i,t-1} \times \\
& \Delta \text{cash}_{i,t} \times D_{Low} + \beta_{15} \text{Belowpcash}_{i,t-1} \times \Delta \text{cash}_{i,t} \times D_{High} + \\
& \beta_{16} \text{Year} + \beta_{17} \text{Industry} + \varepsilon_{i,t} \quad (3)
\end{aligned}$$

Where  $D_{Low}$  denotes smaller firms and  $D_{High}$  denotes larger firms. In this model, Hypothesis 3 is not rejected if the coefficient on  $\text{Belowpcash} \times \Delta \text{Cash} \times D_{Low}$  is positive and greater than that on  $\text{Belowpcash} \times \Delta \text{Cash} \times D_{High}$ .

### Research Variables

In this study, peers are defined as firms that share structural similarities in industrial and technical aspects and can influence each other's performance. Various approaches can be used to identify peer firms, such as firm size, geographic region, and industry classification (Zhuang et al; 2022). In the present study, industry classification is used to determine peers; in other words, firms operating within the same industry are considered peers.

The variables used in this research include dependent, independent, moderating, and control variables, which are selected based on the methodologies of Zhuang et al. (2022) and Faulkender and Wang (2006).

### Dependent Variable

The dependent variable of the study is the marginal value of cash holdings, which, following Faulkender and Wang (2006), is indirectly estimated through the coefficient of  $\Delta \text{Cash}$  ( $\beta_1$ ) using regression model (4). This coefficient captures the change in excess stock returns associated with a one-unit increase in cash holdings, reflecting the value that the market assigns to cash retention. The  $\beta_1$  coefficient is not calculated separately for each firm-year; rather, regression model (4) is extended in the hypothesis testing section to evaluate the impact of the independent variable on the marginal value of cash holdings.

$$\begin{aligned}
R_{i,t} - R_{i,t}^p = & \alpha + \beta_1 \Delta \text{Cash}_{i,t} + \beta_2 \Delta E_{i,t} + \beta_3 \Delta \text{NA}_{i,t} + \beta_4 \Delta I_{i,t} + \beta_5 \Delta D_{i,t} + \\
& \beta_6 \text{Cash}_{i,t-1} + \beta_7 L_{i,t} + \beta_8 \text{NF}_{i,t} + \beta_9 \text{Cash}_{i,t-1} \times \Delta \text{Cash}_{i,t} + \beta_{10} L_{i,t} \times \\
& \Delta \text{Cash}_{i,t} + \varepsilon_{i,t} \quad (4)
\end{aligned}$$

$R_{i,t} - R_{i,t}^P$  represents excess stock returns, where  $R_{i,t}$  is the annual stock return and  $R_{i,t}^P$  is the return of the firm's portfolio, computed according to the Fama and French (1993) approach as follows:

Each year, sample firms are sorted into three size groups (based on market value of equity four months after fiscal year-end) and three book-to-market (BM) ratio groups (based on the previous year-end), resulting in nine portfolios. The monthly returns of all firms within each portfolio are first averaged and subsequently annualized using the buy-and-hold return method (Zhuang et al; 2022).

Buy-and-hold return

$$= (1 + R_1) \times (1 + R_2) \times \dots \times (1 + R_{12}) - 1 \quad (5)$$

In Model (4),  $\Delta Cash$  represents the change in cash holdings relative to year  $t-1$ .  $\Delta E$  denotes the change in net income, calculated as the difference between years  $t$  and  $t-1$ , while  $\Delta NA$  captures the change in total assets excluding cash.  $\Delta I$  refers to the change in interest expenses over the same period, and  $\Delta D$  indicates the change in dividend payments. Financial leverage ( $L$ ) is defined as total debt divided by total assets, and  $NF$  represents net cash flows from financing activities, extracted from the cash flow statement. All variables, except financial leverage, are scaled by the market value of equity at the end of the previous fiscal year.

### Independent Variable

The independent variable in this study is the firm's cash holdings relative to its peers (Belowpcash). Following Zhuang et al. (2022), firms are first classified by industry, and then the independent variable is calculated using the following formula:

$$Belowpcash = \frac{Cash_{i,t} - ACash_{j,t-1}}{ACash_{j,t-1}} \quad (6)$$

Where  $Cash_{i,t}$  denotes the cash holdings of firm  $i$  in year  $t$ , and  $ACash_{j,t-1}$  represents the average cash holdings of peer firms in industry  $j$ , excluding firm  $i$ , in year  $t-1$ . To calculate the peer average, firms are first grouped by industry, and then the mean cash holdings are computed separately for each industry and year.

### Moderating Variables

Following Zhuang et al. (2022), the moderating variables are as follows:

*Firm Size (Size)*: Measured as the natural logarithm of total assets. After calculation, firms within each industry are ranked from largest to smallest based on the previous year's total assets and divided into three groups. Two dummy variables are created:

*D\_Low*: Equals 1 for firms in the smallest size group (third tercile) and 0 for firms in the largest size group (first tercile).

*D\_High*: Equals 1 for firms in the largest size group and 0 for firms in the smallest group.

The middle group is omitted to avoid perfect multicollinearity, allowing a more precise comparison of the effects of the two extremes in hypothesis testing.

*Market Competition*: Measured using the Herfindahl-Hirschman Index (HHI), computed as:

$$HHI_{it} = \sum_{i=1}^N x_i^2 \quad (6)$$

Where  $x_i$  is the market share of firm  $i$  in the relevant industry, calculated as the firm's sales divided by total industry sales. A lower HHI indicates higher competition. After calculating the HHI, firms are ranked from lowest to highest, divided into three groups, and two dummy variables are defined:

*D\_High*: Equals 1 for firms in the highest competition group (lowest HHI) and 0 for firms in the lowest competition group (highest HHI).

*D\_Low*: Equals 1 for firms in the lowest competition group and 0 for firms in the highest competition group.

### Control Variables

Following Faulkender and Wang (2006) and Zhuang et al. (2022), we control for several variables that may affect the marginal value of cash holdings. These include the change in net income ( $\Delta E$ ) and the change in total assets excluding cash ( $\Delta NA$ ), both calculated as the difference between year  $t$  and  $t-1$ . We also include the change in interest expenses ( $\Delta I$ ) and the change in dividend payments ( $\Delta D$ ), measured over the same period. Financial leverage ( $L$ ) is defined as total debt divided by total assets, while net cash flows from financing activities ( $NF$ ) are obtained from the cash flow statement. Additionally, lagged cash holdings ( $Cash_{i,t-1}$ ) are included to account for prior cash positions. All control variables, except financial leverage, are scaled by the market value of equity at the end of the preceding fiscal year.

### Results

Table 1 presents the descriptive statistics of the variables, including the mean, maximum, minimum and standard deviation. To mitigate the influence of outliers, observations below the 1st percentile and above the 99th percentile were treated as outliers and excluded from the analysis.

**Table 1. Descriptive Statistics of Variables**

Variable	Minimum	Maximum	Mean	Standard Deviation
$R_{i,t} - R_{i,t}^P$	-3.1075	3.2499	-0.1329	0.7567
$Belowpcash_{i,t-1}$	-72.8272	73.2963	-0.3741	9.1889
$\Delta Cash_{i,t}$	-0.0991	0.1413	0.0046	0.0233
$\Delta E_{i,t}$	-0.3615	0.3302	0.0155	0.0707
$\Delta NA_{i,t}$	0.5837	3.3830	0.7688	0.5665
$\Delta I_{i,t}$	-0.0468	0.0802	0.0035	0.0128
$\Delta D_{i,t}$	-0.2038	0.1635	0.0081	0.0454
$Cash_{i,t-1}$	0.0001	0.1887	0.0213	0.0246
$L_{i,t}$	0.0662	0.9867	0.5154	0.1930
$NF_{i,t}$	-0.2339	0.3197	0.0050	0.0647

As shown in Table 1, the dependent variable, excess stock return, has an average value of -0.1329, indicating that, on average, the annual stock returns of the firms are slightly lower than the returns of the Fama-French benchmark portfolios. The independent variable, *Belowpcash*, represents the level of a firm's cash holdings relative to the industry peer average. The mean of this variable is -0.3741, suggesting that, on average, firms maintain approximately 37% less cash than the industry peer average. This may reflect either efficient cash management policies in certain firms or constraints in access to financial resources in others.

The standard deviation of *Belowpcash* is 9.1889, indicating considerable dispersion across firms in their deviation from peer cash levels, which could arise from differences in firm size, risk tolerance, and financial strategies. Moreover, the minimum and maximum values of this variable are -72.8272 and 73.2963, respectively, highlighting that some firms hold substantially less or more cash compared to their industry peers. As a measure of deviation from peer liquidity behavior, *Belowpcash* is crucial for analyzing the peer effect and can have a direct impact on the marginal value of cash holdings.

The regression models in this study were estimated controlling for year and industry effects. To test for heteroskedasticity and autocorrelation, the LR test and Breusch-Godfrey test were used, respectively. In some models, the test statistics were significant at the 5% level, indicating the presence of heteroskedasticity and autocorrelation. To address these issues, the models were estimated using Generalized Least Squares (GLS) with robust standard errors clustered by firm. Additionally, the Variance Inflation

Factor (VIF) test confirmed that multicollinearity was not a concern among the explanatory variables.

### Test of Hypothesis 1

According to Hypothesis 1, a firm's cash holdings below the industry peer average increase the marginal value of cash holdings. To test this hypothesis, the regression model (1) was employed, and the estimation results are presented in Table 2.

**Table 2. Regression Results for Testing Hypothesis 1**

$R_{i,t}, R_{i,t}^p =$ $\alpha + \beta_1 \Delta Cash_{i,t} + \beta_2 \Delta E_{i,t} + \beta_3 \Delta NA_{i,t} + \beta_4 \Delta I_{i,t} + \beta_5 \Delta D_{i,t} + \beta_6 Cash_{i,t-1} + \beta_7 L_{i,t} + \beta_8 NF_{i,t} + \beta_9 Cash_{i,t-1} \times \Delta Cash_{i,t} +$ $\beta_{10} L_{i,t} \times \Delta Cash_{i,t} + \beta_{11} Belowpcash_{i,t-1} + \beta_{12} Belowpcash_{i,t-1} \times \Delta cash_{i,t} + \varepsilon_{i,t}$				
Variable	Coefficient	Standard Error	t-Statistic	Significance
$\alpha$	0.2527	0.0045	3.7587	0.0672
$\Delta Cash$	-1.0240	0.5660	-0.5958	1.7186
$\Delta E$	1.4902	0.0010	4.8018	0.3103
$\Delta NA$	-0.2212	0.0030	-4.0188	0.0550
$\Delta I$	0.9052	0.4768	0.7424	1.2193
$\Delta D$	0.2580	0.3814	0.9203	0.2804
$Cash_{i,t-1}$	0.5706	0.2240	1.3057	0.4370
$L$	0.1258	0.0998	1.8345	0.0686
$NF$	-0.4008	0.0529	-2.2277	0.1799
$Cash_{i,t-1} \times \Delta Cash_{i,t}$	12.9882	0.3167	1.0601	12.2510
$L_{i,t} \times \Delta Cash_{i,t}$	1.2418	0.5086	0.6883	1.8041
$Belowpcash_{i,t-1}$	-0.0021	0.0579	-2.1723	0.0009
$Belowpcash_{i,t-1} \times \Delta cash_{i,t}$	0.0432	0.0419	2.3695	0.01823
<i>Year &amp; Industry Effects</i>	Controlled			
<i>F-Statistic</i> <i>(P-Value)</i>	9.9226 (0.0000)		<i>Adjusted R<sup>2</sup></i>	0.0872

In Table 2, the F-statistic is significant at the 5% level, indicating that the overall regression model is statistically significant at the 95% confidence level. The adjusted R<sup>2</sup> is 0.0872, suggesting that approximately 8.8% of the variation in the dependent variable is explained by the independent

variables included in the model. This adjusted R<sup>2</sup> is somewhat lower than that reported by Zhuang et al. (2022), which was around 23%. This difference is likely attributable to structural differences in the market, economic conditions, and the level of information transparency in the Iranian capital market.

To test Hypothesis 1, the interaction term *Belowpcash* ×  $\Delta$ *Cash* is examined. The estimated coefficient of this interaction term is 0.0432 with a p-value of 0.0419, which is positive and statistically significant at the 95% confidence level. The positive sign of this coefficient indicates that when a firm’s cash holdings are below the industry average, the marginal value of cash holdings is higher. Therefore, Hypothesis 1 is not rejected. These results provide evidence of a peer effect on the marginal value of cash holdings.

**Test of Hypothesis 2**

According to Hypothesis 2, it is expected that in firms operating in industries with higher market competition, the peer effect on the marginal value of cash holdings is stronger compared to firms in less competitive markets. The estimation results of the regression model (2) for testing this hypothesis are presented in Table 3.

**Table 3. Regression Results for Testing Hypothesis 2**

$R_{i,t}, R_{i,t}^p = \alpha + \beta_1 \Delta Cash_{i,t} + \beta_2 \Delta E_{i,t} + \beta_3 \Delta NA_{i,t} + \beta_4 \Delta I_{i,t} + \beta_5 \Delta D_{i,t} + \beta_6 Cash_{i,t-1} + \beta_7 L_{i,t} + \beta_8 NF_{i,t} + \beta_9 Cash_{i,t-1} \times \Delta Cash_{i,t} + \beta_{10} L_{i,t} \times \Delta Cash_{i,t} + \beta_{11} Belowpcash_{i,t-1} + \beta_{12} Belowpcash_{i,t-1} \times \Delta cash_{i,t} + \beta_{13} D_{Low} + \beta_{14} Belowpcash_{i,t-1} \times \Delta cash_{i,t} \times D_{Low} + \beta_{15} Belowpcash_{i,t-1} \times \Delta cash_{i,t} \times D_{High} + \epsilon_{i,t}$				
Variable	Coefficient	Standard Error	t-Statistic	Significance
$\alpha$	0.2190	0.0855	2.5592	0.0307
$\Delta Cash$	-2.1282	1.8246	-1.1664	0.2437
$\Delta E$	0.9984	0.2400	4.1594	0.0024
$\Delta NA$	-0.2858	0.4333	-6.5957	0.0001
$\Delta I$	2.2302	1.0924	2.0415	0.0716
$\Delta D$	0.9307	0.4697	1.9813	0.0789
$Cash_{i,t-1}$	0.3211	0.6999	0.4588	0.6572
$L$	0.2456	0.0894	2.7476	0.0226
$NF$	-0.3742	0.1775	-2.1075	0.0643
$Cash_{i,t-1} \times \Delta Cash_{i,t}$	24.0681	24.9415	1.6108	0.1417
$L_{i,t} \times \Delta Cash_{i,t}$	1.5884	1.9653	0.8082	0.4398
$Belowpcash_{i,t-1}$	-0.0023	0.0004	-5.1466	0.0006

$R_{i,t}, R_{i,t}^p = \alpha + \beta_1 \Delta \text{Cash}_{i,t} + \beta_2 \Delta E_{i,t} + \beta_3 \Delta \text{NA}_{i,t} + \beta_4 \Delta I_{i,t} + \beta_5 \Delta D_{i,t} + \beta_6 \text{Cash}_{i,t-1} + \beta_7 L_{i,t} + \beta_8 \text{NF}_{i,t} + \beta_9 \text{Cash}_{i,t-1} \times \Delta \text{Cash}_{i,t} + \beta_{10} L_{i,t} \times \Delta \text{Cash}_{i,t} + \beta_{11} \text{Belowpcash}_{i,t-1} + \beta_{12} \text{Belowpcash}_{i,t-1} \times \Delta \text{cash}_{i,t} + \beta_{13} D_{\text{Low}} + \beta_{14} \text{Belowpcash}_{i,t-1} \times \Delta \text{cash}_{i,t} \times D_{\text{Low}} + \beta_{15} \text{Belowpcash}_{i,t-1} \times \Delta \text{cash}_{i,t} \times D_{\text{High}} + \epsilon_{i,t}$				
Variable	Coefficient	Standard Error	t-Statistic	Significance
$D_{\text{Low}}$	0.1107	0.0357	3.0948	0.0128
$\text{Belowpcash}_{i,t-1} \times \Delta \text{cash}_{i,t} \times D_{\text{Low}}$	0.0524	0.0142	3.6892	0.0050
$\text{Belowpcash}_{i,t-1} \times \Delta \text{cash}_{i,t} \times D_{\text{High}}$	0.0158	0.0688	0.2295	0.8236
<i>Year &amp; Industry Effects</i>	Controlled			
<i>F-Statistic</i> <i>(P-Value)</i>	6.8034 (0.0000)		<i>Adjusted R<sup>2</sup></i>	0.1078

Based on the results presented in Table 3, the F-statistic is significant at the 5% level, indicating that the overall regression model is statistically significant. The adjusted R<sup>2</sup> suggests that approximately 10% of the variation in the dependent variable is explained by the independent variables in the model. To examine the peer effect on the marginal value of cash holdings in firms with high and low market competition, the interaction terms  $\text{Belowpcash}_{i,t-1} \times \Delta \text{cash}_{i,t} \times D_{\text{Low}}$  and  $\text{Belowpcash}_{i,t-1} \times \Delta \text{cash}_{i,t} \times D_{\text{High}}$  were used. For low-competition firms ( $D_{\text{Low}}$ ), the coefficient is 0.0524 and statistically significant with a p-value of 0.0050. In contrast, for high-competition firms ( $D_{\text{High}}$ ), the coefficient is 0.0158 with a p-value of 0.8236, which is not significant at the 5% level. These results indicate that the peer effect on the marginal value of cash holdings is stronger in firms with lower market competition compared to those with higher competition. However, according to Hypothesis 2, it was expected that the peer effect would be stronger in firms with higher market competition than in those with lower competition. Therefore, Hypothesis 2 is not supported.

### Test of Hypothesis 3

According to Hypothesis 3, it is expected that the peer effect on the marginal value of cash holdings is stronger in smaller firms compared to larger firms. The results for testing this hypothesis are presented in Table 4.

**Table 4. Regression Results for Testing Hypothesis 3**

$$R_{i,t}, R_{i,t}^p = \alpha + \beta_1 \Delta \text{Cash}_{i,t} + \beta_2 \Delta E_{i,t} + \beta_3 \Delta \text{NA}_{i,t} + \beta_4 \Delta I_{i,t} + \beta_5 \Delta D_{i,t} + \beta_6 \text{Cash}_{i,t-1} + \beta_7 L_{i,t} + \beta_8 \text{NF}_{i,t} + \beta_9 \text{Cash}_{i,t-1} \times \Delta \text{Cash}_{i,t} + \beta_{10} L_{i,t} \times \Delta \text{Cash}_{i,t} + \beta_{11} \text{Belowpcash}_{i,t-1} + \beta_{12} \text{Belowpcash}_{i,t-1} \times \Delta \text{cash}_{i,t} + \beta_{13} D_s + \beta_{14} \text{Belowpcash}_{i,t-1} \times \Delta \text{cash}_{i,t} \times D_s + \beta_{15} \text{Belowpcash}_{i,t-1} \times \Delta \text{cash}_{i,t} \times D_B + \varepsilon_{i,t}$$

Variable	Coefficient	Standard Error	t-Statistic	Significance
$\alpha$	0.2357	0.1251	1.8837	0.0923
$\Delta \text{Cash}$	-0.7519	2.3282	-0.3229	0.7541
$\Delta E$	1.5493	0.3296	4.6992	0.0011
$\Delta \text{NA}$	-0.1870	0.0613	-3.0500	0.0138
$\Delta I$	0.4192	1.5522	0.2701	0.7932
$\Delta D$	-0.0227	0.3859	-0.0589	0.9543
$\text{Cash}_{i,t-1}$	0.6846	0.5017	1.3644	0.2056
$L$	0.0873	0.1066	0.8189	0.4340
$\text{NF}$	-0.3312	0.2228	-1.4864	0.1713
$\text{Cash}_{i,t-1} \times \Delta \text{Cash}_{i,t}$	5.7931	20.148	0.2894	0.7788
$L_{i,t} \times \Delta \text{Cash}_{i,t}$	1.4836	3.6419	0.4073	0.6933
$\text{Belowpcash}_{i,t-1}$	-0.0015	0.0013	-1.1773	0.2693
$D_s$	0.0071	0.0337	0.2115	0.8372
$\text{Belowpcash}_{i,t-1} \times \Delta \text{cash}_{i,t} \times D_s$	0.0435	0.0346	1.2557	0.2408
$\text{Belowpcash}_{i,t-1} \times \Delta \text{cash}_{i,t} \times D_B$	0.0954	0.0393	2.4297	0.0380
<i>Year &amp; Industry Effects</i>	Controlled			
<i>F-Statistic</i> <i>(P-Value)</i>	4.2214 (0.0000)		<i>Adjusted R<sup>2</sup></i>	0.0621

Based on Table 4, the F-statistic has a p-value of 0.000, which is below the 5% significance level, indicating that the overall regression model is statistically significant. To test Hypothesis 3, which examines the peer effect on the marginal value of cash holdings in smaller versus larger firms, the interaction coefficients  $\text{Belowpcash} \times \Delta \text{Cash} \times D_B$  and  $\text{Belowpcash} \times \Delta \text{Cash} \times D_s$  were used. At the smaller-firm level ( $D_s$ ), the coefficient is 0.0435 with a p-value of 0.2408, which is not statistically significant. At the larger-firm level ( $D_B$ ), the coefficient is 0.0954 with a p-value of 0.038, which is statistically significant. These results indicate that the peer effect

on the marginal value of cash holdings is stronger in larger firms, whereas no significant effect is observed in smaller firms. According to Hypothesis 3, it was expected that smaller firms would exhibit a stronger peer effect compared to larger firms; however, the results show the opposite, and therefore Hypothesis 3 is not supported.

### **Discussion and Conclusion**

As discussed in the theoretical background, the policies and decisions of peer firms can influence other companies within the same industry. This study examined the impact of peer firms on the marginal value of cash holdings. According to Hypothesis 1, when a firm's cash holdings are lower than the industry peer average, the marginal value of cash holdings increases, reflecting a peer effect on cash-holding value. The empirical results support this hypothesis, showing that a firm's cash-holding level relative to its peers has a positive and significant effect on the marginal value of cash holdings; thus, Hypothesis 1 is not rejected. These findings are consistent with the study by Zhuang et al. (2022) and indicate the presence of a peer effect in corporate liquidity behavior, which can be explained both theoretically and behaviorally.

From an information-based perspective, cash holdings can serve as a signal to the market. When firms with below-average liquidity increase their cash reserves, the market may interpret this as an indication of improved liquidity, reduced financial risk, or preparedness for future investment opportunities. Consequently, the market reacts positively, enhancing the marginal value of cash holdings for these firms (Faulkender & Wang, 2006; Zhuang et al; 2022). Additionally, from a competition-based perspective, firms operating in similar industries pay attention to each other's financial behaviors, and deviations from common industry practices may be perceived as risky decisions. Firms with lower cash levels relative to peers may be viewed by investors as more vulnerable. In such cases, increasing cash reserves aligns these firms with industry norms and signals efforts to maintain competitive positioning, thereby boosting their market value (Leary & Roberts, 2014). The results of Hypothesis 1 are consistent with this theoretical reasoning.

The results of Hypothesis 2 indicate that the peer effect on the marginal value of cash holdings is significant in firms operating in low-competition markets. Contrary to the expectations of Hypothesis 2, which predicted that peer effects would be stronger in high-competition markets, the findings show the opposite, leading to the rejection of this hypothesis. These results are inconsistent with Zhuang et al. (2022). A plausible explanation for this outcome is that in less competitive markets, firms are more likely to rely on the behavior of their peers as a benchmark for financial decision-making. When the number of competitors is limited, their actions have a

greater influence on determining financial policies such as cash management and firm valuation. In low-competition environments, firms tend to align closely with peer behavior to mitigate strategic risks, which can significantly affect firm value. Furthermore, the reduced pressure for differentiation in these markets encourages firms to pay closer attention to competitors, making their decisions directly influenced by peer behavior. This alignment strengthens the peer effect in low-competition markets and directly impacts the marginal value of cash holdings. In contrast, firms operating in highly competitive markets need to adopt unique strategies to survive and grow. Such strategies may involve independently adjusting cash holdings regardless of peer behavior. Consequently, the influence of peers in these firms is less pronounced, as financial decisions are driven more by firm-specific needs rather than by competitor actions. In other words, independent decision-making reduces the impact of peers on both financial choices and the marginal value of cash holdings.

Regarding Hypothesis 3, the findings reveal that, contrary to expectations, peer effects are significant in larger firms, whereas no significant effect is observed in smaller firms, leading to the rejection of this hypothesis. This result also contrasts with Zhuang et al. (2022). Although theoretically, smaller firms, due to financial and informational constraints, are expected to be more attentive to peer behavior, in practice, they may lack the flexibility to respond to changes in liquidity. Limited access to financial markets and alternative financing options restricts their ability to act on observed peer behavior. Therefore, even if peer effects exist, smaller firms may not be able to follow them, explaining the lack of significance in their marginal cash value. Larger firms, on the other hand, generally possess greater financial transparency and are closely monitored by investors, analysts, and other firms. This visibility makes their liquidity behavior more observable to peers. In larger firms, especially in sizable and competitive industries, the need to avoid perceived stakeholder risk increases the propensity to align with peers, thereby amplifying the peer effect and exerting a stronger influence on the marginal value of cash holdings. The marginal value of cash holdings is closely linked to both liquidity needs and investment opportunities. Any deviation by a large firm from peer behavior may be interpreted by investors as managerial weakness or higher risk, making the marginal value of cash holdings in these firms more sensitive to peer behavior.

### **Implications and Limitations**

Based on the findings of this study, it is recommended that corporate managers adopt a comparative analysis approach to peer cash management policies. Specifically, firms with lower liquidity relative to their peers should examine the cash-holding strategies of successful companies and,

where feasible, implement similar practices. Given the finding that peer effects are stronger in low-competition markets, managers operating in such markets are advised to base liquidity decisions not solely on peer behavior but also on independent financial and strategic analyses.

Managers of larger firms are encouraged to pay closer attention to the behavior of competitors and peers within the industry, as their actions can significantly influence the marginal value of cash holdings. Conversely, managers of smaller firms can leverage the relative independence from peer influence and tailor their financial strategies based on the specific needs and objectives of their companies. Investors and analysts are similarly advised to benchmark a company's liquidity level against the industry average while also considering market competition intensity and firm size in their evaluation.

One limitation of this study is the use of nominal interest costs instead of real interest rates. Given that interest rates in the Iranian economy are largely administratively set and may not accurately reflect actual market conditions, this could reduce the precision of estimating their impact on cash holdings. Furthermore, market competition was measured based on publicly listed firms. In industries with few listed companies, the competition index may not fully capture the actual competitive dynamics of the sector.

Considering the study's limitations, including administratively set interest rates, macroeconomic and political uncertainties that may affect corporate financial decisions, it is recommended that future research examine peer effects on the marginal value of cash holdings under different economic conditions, such as recessions or financial crises. Future studies should also employ real or inflation-adjusted interest rates. Given the limited number of publicly listed firms in some industries, it is further suggested that subsequent research incorporate data from the entire industry to obtain a more comprehensive measure of market competition and compare the results with the present study. Additionally, examining other relevant factors, such as the level of financial information transparency, investor sentiment, and corporate ownership structure, could provide a deeper and more comprehensive understanding of peer effects on the marginal value of cash holdings. Such studies, by accounting for environmental conditions and the specific constraints of the Iranian market, could enhance the generalizability of the findings.

## References

- Acharya, V. V; Almeida, H; & Campello, M. (2007). Is cash negative debt? A hedging perspective on corporate financial policies. *Journal of Financial Intermediation*, 16(4), 515–554.
- Ali-Rind, A; Boubaker, S; & Jarjirf, S. L. (2023). Peer effects in financial economics: A literature survey. *Research in International Business and Finance*, 64, 101873.
- Bodaghi, H; Valiyan, H; Mortazaviyan, S. F; & Vaseyee charmahali, M. (2021). The Effect of CEO Managerial Ability on Marginal Value of Cash and Corporate Opacity of Companies Listed on Tehran Stock Exchange. *Financial Management Strategy*, 9(4), 191-216. (In Persian)
- Bolton, P; & Scharfstein, D. S. (1990). A theory of predation based on agency problems in financial contracting. *The American Economic Review*, 80(1), 93–106.
- Chen Y.-W; Chan K; & Chang Y. (2019). Peer effects on corporate cash holdings. *International Review of Economics and Finance*, 61, 213-227.
- DiMaggio, P; & Powell, W.W. (1983). The iron cage revisited: collective rationality and institutional isomorphism in organizational fields. *American Sociological Review*, 48, 147–160.
- Dittmar, A; & Mahrt-Smith, J. (2007). Corporate governance and the value of cash holdings. *Journal of Financial Economics*, 83(3), 599–634.
- Duong, H. K; Ngo, A. D; & McGowan, C. B. (2015). Industry peer effect and the maturity structure of corporate debt. *Managerial Finance*, 41(7), 714–733.
- Faulkender, M; & Wang, R. (2006). Corporate financial policy and the value of cash. *The Journal of Finance*, 61(4), 1957–1990.
- Fama, E. F; & French, K. R. (1993). Common risk factors in the returns on stocks and bonds. *Journal of Financial Economics*, 33(1), 3–56.
- Fattahi, Y; Kordestani, G; & Daryaei, A. A. (2021). Impact of Accounting Comparability according to the Peer Firms on Board Compensation. *Budget and Finance Strategic Research*, 2(2), 11-49. (In Persian)
- Foley, C. F; Hartzell, J. C; Titman, S; & Twite, G. (2007). Why do firms hold so much cash? A tax-based explanation. *Journal of Financial Economics*, 86(3), 579–607.
- Frésard, L. (2010). Financial strength and product market behavior: The real effects of corporate cash holdings. *The Journal of Finance*, 65(3), 1097–1122.
- Gill, A; & Shah, C. (2012). Determinants of corporate cash holdings: Evidence from Canada. *International Journal of Economics and Finance*, 4(1), 70–79.
- Hoberg, G; Phillips, G; & Prabhala, N. (2014). Product market threats, payout, and financial flexibility. *The Journal of Finance*, 69(1), 293–324.
- Joodaki, M; Khalili, Y; & Rahmati, L. (2023). Investigating the moderating effect of Leader and Young firms in industry on the relationship between Peer Firms and the Firm's Investment based on the theories of Information Deficit and Competitiveness. *Journal of Accounting Advances*, 15(2), 71-104. (In Persian)
- Kaustia, M; & Rantala, V. (2015). Social learning and corporate peer effects. *Journal of Financial Economics*, 117(3), 653–669.
- Kadzima, M; Machokoto, M; & Chamisa, E. (2024). The real implications of mimicking peer firms' cash holdings. *International Journal of Managerial Finance*, 20(4), 940-966.

- Kordestani, G; & jafarisugh, A. (2022). Peer Companies Performance and Earnings Management: The Effect of Capital Market Pressure. *Judgment and Decision Making in Accounting*, 1(3), 71-100. (In Persian)
- Leary, M. T; & Roberts, M. R. (2014). Do peer firms affect corporate financial policy? *The Journal of Finance*, 69(1), 139–178.
- Lee, E; & Powell. R; (2011). Excess cash holdings and shareholder value. *Accounting & Finance*, 51(2), 549-574.
- Liberman, B; & Asaba, S. (2006). Why do firms imitate each other? *Academy of Management Review*, 31(2), 366–385.
- Lyandres, E; & Palazzo, B. (2016). Cash holdings, competition, and innovation. *Journal of Financial and Quantitative Analysis*, 51(6), 1823–1861.
- Machokoto, M; Gyimah, D; & Ntim, C.G. (2021). Do peer firms influence innovation? *The British Accounting Review*, 53(5).
- Manski, C. F. (1993). Identification of endogenous social effects: The reflection problem. *The Review of Economic Studies*, 60(3), 531–542.
- Meshki Miavaghi, M; & Sanyeei, M. (2015). Time variation in the marginal value and marginal rate of firms' cash holdings in the Tehran Stock Exchange (TSE). *Accounting and Auditing Review*, 22(3), 401-419. (In Persian)
- Moradi, M; Jabari Noghabi, M; & Bayat, N. (2019). The relationship between persistent excess cash and the marginal value of cash. *Financial Accounting and Auditing Research*, 9(33), 81–105. (In Persian)
- Najafgholizadeh siam, S; Shahvalizadeh, A; & Pabahi, D. (2019). Investigating the effect of product market competition and representation on final cash value in companies admitted to Tehran Stock Exchange. *Journal of Accounting and Management Vision*, 2(12), 17-31. (In Persian)
- Opler, T; Pinkowitz, L; Stulz, R; & Williamson, R. (1999). The determinants and implications of corporate cash holdings. *Journal of Financial Economics*, 52(1), 3–46.
- Pinkowitz, L; Stulz, R; & Williamson, R; (2006). Does the contribution of corporate cash holdings and dividends to firm value depend on governance? A cross-country analysis. *J. Finance*. 61(6), 2725–2751.
- Soukhakian, I; Nazari, H; & Tahriri, A. (2020). Managerial Ability and Marginal Value of the Cash. *Empirical Studies in Financial Accounting*, 17(66), 123-148. (In Persian)
- Wang, H. J; Li, Q. Y; & Xin, W. (2014). Economic policy uncertainty, cash holdings and market value. *Journal of Financial Research*, 9, 53-68.
- Zhuang, Y; Nie, J; & Wu, W. (2022). Peer influence and the value of cash holdings. *Journal of Empirical Finance*, 69, 265–284.

#### COPYRIGHTS



This is an open access article under the CC BY-NC-ND 4.0 license.