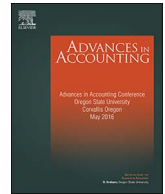




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## Fair value accounting and corporate cash holdings

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## ABSTRACT

A trade-off often exists between relevance and reliability of accounting numbers. Prior research suggests that fair value accounting increases the relevance and decreases the reliability. The reduced reliability may lead to more agency conflicts. We predict a positive relation between the use of fair value inputs and the level of corporate cash holdings because prior research links more agency conflicts to a higher level of cash. We find that increased use of fair value inputs is associated with a higher level of cash holdings, and the results are mainly driven by Level 1 and Level 2 fair value inputs. In addition, we find that our results are stronger for firms with more-able managers.

## 1. Introduction

Fair value accounting has received tremendous attention in academic research since the early 2000s. In 2006, the [Financial Accounting Standards Board, 2006](#) (FASB) issued a significant standard, Accounting Standards Codification 820, (ASC 820), *Fair Value Measurement*. ASC 820 requires that firms using fair value inputs (assets and liabilities) disclose fair value inputs by levels. Specifically, Level 1 fair value inputs have the highest level of measurement certainty, and Level 3 fair value inputs have the lowest level of measurement certainty. A large body of prior research documents that the use of fair value inputs increases the relevance (e.g., [Song, Thomas, & Yi, 2010](#)) and reduces the reliability of accounting numbers (e.g., [Allen and Ramanna, 2013](#)), suggesting a trade-off between relevance and reliability.

Despite the surge of attention on fair value accounting, there is little empirical evidence on whether and how the use of fair value inputs relates to the level of corporate cash holdings. The purpose of this study is to examine the association between fair value inputs and corporate cash holdings. From the relevance-reliability trade-off perspective, if using fair value inputs reduces the reliability of accounting numbers, then investors may make wrong decisions because these numbers are less-credible and less-verifiable. In addition, a high level of managerial opportunistic or self-serving behavior is often involved in the use of fair value accounting ([Watts, 2003](#)). Both factors suggest that the reduced reliability may increase the agency conflicts between investors and managers. Thus, we argue that a positive association may exist between the use of fair value inputs and cash holdings because prior research (e.g., [Oper, Pinkowitz, Stulz, and Williamson, 1999](#); [Dittmar, Mahrt-Smith, & Servaes, 2003](#); [Kalcheva & Lins, 2007](#)) suggests that firms with

more agency conflicts hold more cash.

We focus on cash in our study for the following reasons. First, cash is an important liquid asset on a firm's balance sheet. [Myers and Rajan \(1998\)](#) argue that managers often manipulate cash to engage in activities that are against shareholders' interests because of the liquid nature of cash. Second, anecdotal evidence suggests that the level of cash holdings has significantly increased recently. For example, the average cash-to-assets ratios have increased from approximately 11% in 1980 to 23% in 2006 ([Bates, Kahle, & Stulz, 2009](#)). It appears that more companies (i.e., Apple, Google, and etc.) hold a significant amount of cash. For example, Apple held \$208 billion cash in 2015. Hence, understanding why firms hold large amounts of cash has been the focus of research in finance and accounting. Third, from an accounting perspective, cash is regarded as the most risky account, because a large number of accounting transactions flow through this account. Thus, different stakeholder groups such as shareholders and auditors pay extra attention to a firm's cash account ([Whittington & Pany, 2015](#)).

Using 24,741 firm-year observations from 2008 to 2015, we regress the level of cash holdings on the intensity of fair value inputs and control for other factors that may influence the level of cash holdings. We find a significant positive relation between the intensity of fair value inputs and cash holdings, suggesting that firms using more fair value inputs hold more cash. This evidence is consistent with our prediction that more use of fair value leads to more agency problems, leading to a higher level of cash. We further find that our results are mainly driven by Level 1 and Level 2 fair value inputs, as results show a significant relation between cash and Level 1 and Level 2 inputs. We do not find a significant positive relation between cash and the intensity of Level 3 inputs, which is regarded as the least reliable level (relative to

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Level 1 and 2). We acknowledge that the insignificant relation between cash and Level 3 inputs (the least reliable level) is inconsistent with our prediction and argue that this insignificant relation may be partially caused by the lower frequency and smaller magnitude of Level 3 inputs.

It is possible that some other firm characteristics may affect the use of fair value accounting and cash holdings simultaneously. In addition, both the use of fair value accounting and cash holdings are choices of a firm, suggesting that certain endogeneity issues may exist in our study. Therefore, we perform a battery of additional tests to check the robustness of our primary findings and to mitigate concerns about endogeneity. We still obtain similar results, suggesting that our findings are robust and that endogeneity is not a major concern.

Our study makes several notable contributions. First, it contributes to and links two distinctive streams of research: fair value measurements in accounting and corporate cash holdings in finance literature. To the best of our knowledge, this is the first study that examines the relation between the use of fair value inputs and cash holdings. Second, our study joins the debate on whether using fair value inputs is beneficial or detrimental to the transparency and quality of financial reporting. Our findings suggest that using more fair value inputs may cause more agency conflicts, leading to a high level of cash holdings. Hence, our findings are in line with prior studies (e.g., Muller & Riedl, 2002). In particular, our findings strengthen the validity of the relevance-reliability trade-off and the notion in prior research that using fair value inputs decreases the reliability of accounting numbers. Third, although a large body of literature on the determinants of cash holdings exists, Kusnadi and Wei (2012) argue that “the debate on the agency cost explanation for cash holdings is still on-going”. Hence, our study joins the debate on the agency motive for cash holdings. Moreover, examining the impact of fair value inputs on cash should also lead to a more comprehensive understanding of the determinants of cash holdings. Fourth, our study also contributes to the managerial ability literature. Prior research (e.g., Demerjian, Lev, & McVay, 2012) suggest that managerial ability influences firm performance and outcomes and that more-able managers better manage firm resources. We find that our results are stronger for firms with more-able managers, suggesting that managerial ability plays an important role in using fair value inputs. Lastly, our study has practical implications. For example, investors who are concerned about agency problems should be alert if their firms use more fair value assets and liabilities. Our results provide practitioners with additional information about the determinants of cash holdings. Our study also has implications for standard setters who design and implement standards on the use of fair value accounting.

The remainder of this paper is divided into four sections. Section 2 provides a literature review of related research and develops the hypothesis. Section 3 presents the research design. Section 4 discusses the main results and Section 5 presents results of additional tests. Section 6 concludes this paper.

## 2. Literature review and hypothesis development

### 2.1. Corporate cash holdings

Finance literature has extensively examined the determinants of corporate cash holdings. Opler, Pinkowitz, Stulz, and Williamson (1999) argue that a firm's optimal cash level is determined by the trade-off between marginal benefits and costs of holding cash. Using a large sample of public U.S. firms from 1971 to 1994, Opler et al. (1999) find that the level of cash is determined by several firm-level variables such as size, leverage, working capital, market-to-book ratio, operating cash flow, capital expenditures, dividends, and research and development expenditures. Dittmar et al. (2003) find that firms in countries with weak protection of shareholders rights need to hold more cash. Similarly, Dittmar and Mahrt-Smith (2007) find that firms with weak corporate governance hold more cash than firms with strong governance. Foley, Hartzell, Titman, and Twite (2007) find that tax burden is an

important factor in determining the level of cash. Tong (2010) examines the impact of CEO's risk characteristics on cash holdings and finds that risk-taker CEOs hold less cash. Subramaniam, Tang, Yue, and Zhou (2011) argue that firm structure should influence cash holdings, and find that firms with more business segments (i.e., more diversified firms) hold less cash. Hill, Fuller, Kelly, and Washam (2014) find that firms with more political connections hold a lower level of cash. Cohen and Li (2016) find that firms that have the government as a major customer hold less cash than firms that do not have the government as a major customer.

Bates et al. (2009) propose that one possible motive to explain the level of cash is the agency conflict. This agency motive argues that entrenched managers (those do not maximize shareholders' value) would rather keep more cash than increase payouts to shareholders (Jensen, 1986). Other studies (e.g., Hartford, 1999; Dittmar et al., 2003, Faulkender & Wang, 2006; Pinkowitz, Stulz, & Williamson, 2006; and Dittmar and Mahrt-Smith, 2007) also find that firms with more agency problems (i.e., agency conflicts) tend to hold more cash. Nikolov and Whited (2011) suggest that agency problems can lead to an increase in cash holdings by approximately 22%. Gao, Harford, and Li (2013) find that public firms hold more cash than private firms, arguing that this difference (in cash) is caused by the high number of agency problems or conflicts in public firms. Cheung (2016) finds that socially responsible firms hold more cash than socially irresponsible firms and argues that socially responsible firms focus on maximizing stakeholders value instead of shareholders' value. Hence, Cheung (2016) suggests that socially responsible firms have more agency conflicts (between managers and investors) because these firms put too much focus on their stakeholders rather than their shareholders.

### 2.2. Fair value accounting and ASC 820

Relevance and reliability are “two primary qualities that make accounting information useful for decision making” (FASB, 1980; p50). Relevance refers to timeliness, comparability and understandability, while reliability refers to credibility and verifiability of accounting information. The FASB suggests a trade-off between relevance and reliability and states that significant disagreements often arise whether the relevance is more important than the reliability to information users (FASB, 1980; p8). Recent studies (e.g., Schondube-Pirchegger & Schondube, 2017) also suggest that whether a focus on relevance or reliability makes accounting information more useful still remains unknown. Allen and Ramanna (2013) argue that there is a trade-off between relevance and reliability and that the FASB tends to propose accounting standards that increase relevance and reduce reliability. One classic example of such standards is the fair value accounting standard. Since the early 2000s, the FASB has expanded the use of fair value accounting. Examples of fair value accounting include derivatives and hedges, financial assets, and goodwill impairment.

The savings and loan crisis of the 1980s and 1990s has generated tremendous criticism of the use of historical cost accounting. Many argue that the use of historical cost accounting fails to provide accurate and timely information to users. Instead, many believe that the use of fair value accounting may better reflect the true economic substance or reality. Accounting standard setters have moved toward greater use of fair values for reporting assets and liabilities since the beginning of the 2000s (Song et al., 2010). For example, the FASB established a project for fair value measures in 2003. In September 2006, the FASB issued ASC 820 (formerly known as FAS No. 157), *Fair Value Measurement*. The FASB claims that fair value information is relevant to information users (Paragraph C2 of ASC 820).

ASC 820 defines fair value as “the price that would be received to sell an asset or paid to transfer in an orderly transaction between market participants at the measurement date”. ASC 820 establishes a hierarchy of inputs for fair value measurements from the least to most risky. Level 1 inputs are observable prices for identifiable assets or

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