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How does financial reporting quality relate to investment efficiency? ☆

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ABSTRACT

Prior evidence that higher-quality financial reporting improves capital investment efficiency leaves unaddressed whether it reduces over- or under-investment. This study provides evidence of both in documenting a conditional negative (positive) association between financial reporting quality and investment for firms operating in settings more prone to over-investment (under-investment). Firms with higher financial reporting quality also are found to deviate less from predicted investment levels and show less sensitivity to macro-economic conditions. These results suggest that one mechanism linking reporting quality and investment efficiency is a reduction of frictions such as moral hazard and adverse selection that hamper efficient investment.

1. Introduction

Prior studies suggest that higher-quality financial reporting should increase investment efficiency (e.g., Bushman and Smith, 2001; Healy and Palepu, 2001; Lambert et al., 2007). Consistent with this argument, Biddle and Hilary (2006) found that firms with higher-quality financial reporting exhibit higher investment efficiency proxied by lower investment-cash flow sensitivity. However, investment-cash flow sensitivity can reflect either financing constraints or an excess of cash (e.g., Kaplan and Zingales, 1997, 2000; Fazzari et al., 2000). These findings raise the further question of whether higher-quality financial reporting is associated with a reduction of over-investment or with a reduction of under-investment. This study provides evidence of both.

☆ This paper integrates two working papers: "How Does Financial Accounting Quality Improve Investment Efficiency?" by Biddle and Hilary, and "Financial Reporting Quality and Investment Efficiency" by Verdi. We appreciate comments from Brian Bushee, Gavin Cassar, John Core, Wayne Guay, Luzi Hail, Bob Holthausen, S.P. Kothari (the Editor), Rick Lambert, Clive Lennox, Christian Leuz, Jeffrey Ng, Fernando Penalva, Jeff Pittman, Scott Richardson, Konstantin Rozanov, Tjomme Rusticus, Cathy Schrand, Irem Tuna, Ro Verrecchia, Charles Wasley (the referee), Ross Watts, Joe Weber, Sarah Zechman, and Guochang Zhang. We also thank workshop participants at the Boston University, Duke University, HEC Lausanne, Hong Kong University of Science and Technology, the University of Houston, the University of Iowa, London Business School, Massachusetts Institute of Technology, Ohio State University, the University of Pennsylvania, Rice University, Stanford University, Tilburg University, Tsinghua University, the University of Michigan, University of Arizona, the University of California–Los Angeles, the University of Chicago, the University of North Carolina, the University of Utah, and the University of Washington. We are grateful for the expert research assistance of Fenny Cheng. We thank Feng Li for providing us with his measure of financial transparency.

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We begin by positing that the association between financial reporting quality and investment efficiency relates to a reduction of information asymmetry between firms and external suppliers of capital. For example, higher financial reporting quality could allow constrained firms to attract capital by making their positive net present value (NPV) projects more visible to investors and by reducing adverse selection in the issuance of securities. Alternatively, higher financial reporting quality could curb managerial incentives to engage in value destroying activities such as empire building in firms with ample capital. This could be achieved, for example, if higher financial reporting facilitates writing better contracts that prevent inefficient investment and/or increases investors' ability to monitor managerial investment decisions.

Based on this reasoning, we hypothesize that higher-quality financial reporting is associated with either lower over-investment, lower under-investment, or both. We use three approaches to investigate these hypotheses. First, we examine whether financial reporting quality is associated with a lower investment among firms more prone to over-invest and higher investment for firms more likely to under-invest. To do so, we partition the sample by firm-specific characteristics – cash and leverage – shown to be associated with over- and under-investment (e.g., Myers, 1977; Jensen, 1986). Second, we directly model the expected level of investment based on a firm's investment opportunities to examine the relation between financial reporting quality and the deviation from this expected level. Third, we identify settings where firms are more likely to either over- or under-invest for exogenous reasons using as partitioning variables aggregate investment at the economy and the industry levels.

Two key constructs in this analysis are investment efficiency and financial reporting quality. We conceptually define a firm as investing efficiently if it undertakes projects with positive net present value (NPV) under the scenario of no market frictions such as adverse selection or agency costs. Thus, under-investment includes passing up investment opportunities that would have positive NPV in the absence of adverse selection. Correspondingly, over-investment is defined as investing in projects with negative NPV.

We define financial reporting quality as the precision with which financial reporting conveys information about the firm's operations, in particular its expected cash flows, that inform equity investors. This definition is consistent with the Financial Accounting Standards Board Statement of Financial Accounting Concepts No. 1 (1978), which states that one objective of financial reporting is to inform present and potential investors in making rational investment decisions and in assessing the expected firm cash flows. To enhance comparability with prior studies, we use a measure of accruals quality derived in Dechow and Dichev (2002) as one proxy for financial reporting quality. This measure is based on the idea that accruals improve the informativeness of earnings by smoothing out transitory fluctuations in cash flows and it has been used extensively in the prior literature. Second, we use a measure of accruals quality proposed by Wysocki (2008) to address limitations in the Dechow and Dichev measure. Finally, in order to capture a more forward-looking aspect of financial reporting quality, we use a measure of readability of financial statements proposed by Li (2008) called the FOG Index. Li shows that the FOG Index is associated with earnings persistence and with future firm profitability.

Our analysis yields three key findings. First, we find that higher reporting quality is associated with both lower over- and under-investment. Specifically, reporting quality is negatively associated with investment among firms shown by the prior literature to be more likely to over-invest (i.e., cash rich and unlevered firms) (Myers, 1977; Jensen, 1986), and positively associated with investment among firms shown to be more likely to under-invest (e.g., firms that are cash constrained and highly levered). Thus, this finding suggests that the relation between financial reporting quality and investment is conditional on the likelihood that a firm is in a setting more prone to over- or under-investment. Second, firms with higher reporting quality are less likely to deviate from their predicted level of investment when modeled at the firm level. Third, reporting quality is negatively related to investment when aggregate investment is high and positively related when aggregate investment is low. This finding suggests that firms with higher financial reporting quality are less affected by aggregate macro-economic shocks than firms with lower-quality financial reporting.

A credible alternative interpretation of our results is that they could be capturing the effect of different corporate governance mechanisms that are correlated with reporting quality. To address this concern, we explicitly test whether alternative monitoring mechanisms – namely institutional ownership, analyst coverage, and the market for corporate control (proxied by the *G-Score* index of anti-takeover provisions) – are associated with investment efficiency. The evidence is mixed on whether these governance mechanisms reduce over- and under-investment. However, our inferences regarding the association between financial reporting quality and investment are not affected by the inclusion of these corporate governance metrics suggesting that the effect we document is not simply a manifestation of reporting quality as a proxy for corporate governance.

While our results suggest that financial reporting quality is associated with higher investment efficiency, some caveats are in order. First, our main findings use a comprehensive measure of investment. When we investigate sub-components of investment, our results are stronger for R&D activities and acquisitions than for capital expenditures but the results for capital expenditures are insignificant for the Wysocki (2008) measure of accruals quality and weaker for the FOG index. Second, throughout the paper the results are strongest for the Dechow and Dichev's measure than for the other financial reporting quality proxies. Given the concerns raised by Wysocki (2008) regarding the construct validity of *AQ* as a proxy for financial reporting quality, we further show that our results are generally robust to the use of a financial reporting quality index based on the Wysocki measure of accruals quality and the FOG index. Nevertheless, the economic magnitude of our findings might be better captured by the findings using these latter variables.

Our findings contribute to a growing body of literature that studies relations between financial reporting quality and investment (e.g., Bens and Monahan, 2004; Biddle and Hilary, 2006; Bushman et al., 2006; Beatty et al., 2008; Francis and