



# Stock price synchronicity, crash risk, and institutional investors



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## ABSTRACT

Both stock price synchronicity and crash risk are negatively related to the firm's ownership by dedicated institutional investors, which have strong incentive to monitor due to their large stake holdings and long investment horizons. In contrast, the relations become positive for transient institutional investors as they tend to trade rather than monitor. These findings suggest that institutional monitoring limits managers' extraction of the firm's cash flows, which reduces the firm-specific risk absorbed by managers, thereby leading to a lower  $R^2$ . Moreover, institutional monitoring mitigates managerial bad-news hoarding, which results in a stock price crash when the accumulated bad news is finally released.

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## 1. Introduction

Institutional investors have become the dominant equity investor in the U.S. during the last 20 years, holding 78.5% of U.S. common equity in 2007.<sup>1</sup> The large presence of institutional investors has important implications for both corporate decisions and stock price behavior. While the literature on the informational role of institutional investors focuses on stock prices and returns, we examine the relation between institutional investors and the higher moments of return distributions, specifically the stock price synchronicity and crash risk of their holding firms.<sup>2</sup>

Since Roll (1988), a growing literature has used  $R^2$ , a common measure of stock price synchronicity, as a proxy for stock price informativeness. Morck et al. (2000) find that the average market model  $R^2$  is higher in less developed countries due to the poor protection of investors' property rights. Jin and Myers (2006) note that a higher  $R^2$  is caused by information opacity combined with the managers' capture of the firm's cash flow. The limited information and poor protection of investors enables the managers to capture more of the firm's cash flow, in the process absorbing more firm-specific variance, which leads to a higher  $R^2$ .

We hypothesize that strong investor monitoring, which limits managers' capture of the firm's cash flows, should reduce the  $R^2$  of the firm's stock price. According to Chen et al. (2007b), investor monitoring consists of both gathering firm-specific information and influencing management to protect investors' property rights. The limitation of managers' extraction of private benefits depends on the strength of investor monitoring. Under strong investor monitoring, managers have to reduce their capture, thereby absorbing less firm-specific risk during the process. This then decreases the  $R^2$ . In contrast,  $R^2$  would increase when investor monitoring is weak, as managers are able to increase their capture, everything else equal. Therefore, there should be a negative relation between  $R^2$  and the strength of investor monitoring.

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<sup>1</sup> According to French (2008), direct individual ownership of U.S. common stocks has fallen from 47.9% in 1980 to 21.5% in 2007.

<sup>2</sup> A literature review is provided in the next section.

Monitoring by large shareholders has long been considered an important governance solution to agency problems (Shleifer and Vishny, 1986). As institutional ownership increases over time, many regulators and academics have looked to institutional investors as potential monitors due to their monitoring advantage over diffuse shareholders. Theoretical studies by Maug (1998) and Kahn and Winton (1998) show that institutional monitoring is a function of the size of shareholdings. Institutional investors have a greater incentive to monitor managers if they maintain a larger stake in the firm for a longer period. On the other hand, when institutional investors hold relatively few shares in a firm, they can easily liquidate their investment if the firm performs poorly, and therefore have less incentive to monitor. To gauge the monitoring incentive of institutional investors, we follow the methodology of Bushee (1998) and classify them into three categories based on their ownership stability and stake size: (1) dedicated institutional investors, which provide stable ownership and take large positions in portfolio companies; (2) transient institutions, which exhibit high portfolio turnover and own small stakes in individual firms; and (3) quasi-indexers, which trade infrequently but own small stakes. Compared to transient investors, dedicated institutions have a stronger incentive to understand and monitor their portfolio firms, due to larger stakes and longer investment horizons. The strong monitoring by dedicated institutional investors reduces managers' extraction of the firm's cash flow and thereby decreasing the  $R^2$ . Indeed, using a large sample of U.S. publicly traded firms during 1987–2010, we find that both the holding and trading of dedicated institutional investors are significantly associated with a lower  $R^2$ . In contrast, these relations become positive for transient institutions which own small stakes in portfolio companies and trade aggressively to maximize short-term gains. Due to their short-term focus and highly diversified holdings, transient institutions have little incentive to gather firm-specific information relevant to the long-run value. These investors tend to liquidate their investment if the firm performs poorly rather than exert costly efforts to discipline the managers.<sup>3</sup> The weak monitoring of transient investors allows managers to hide and capture more of the firm's cash flow, which results in a higher  $R^2$ .<sup>4</sup>

Next, we examine the relation between institutional investors and crash risk. Another prediction of the Jin and Myers (2006) model is about individual firm stock price crashes, which occur when accumulated negative firm-specific information suddenly becomes publicly available. According to Jin and Myers (2006), when cash flow is lower than investors expect, managers hide the bad news and reduce their capture in an effort to protect their jobs. However, when the accumulated bad news finally crosses a tipping point, managers give up trying to conceal the information and all the bad news is released at once, which then results in a stock price crash. To the extent that monitoring by dedicated investors attenuates the bad-news hoarding, we would expect a negative relation between dedicated ownership and stock price crash. Using three alternative measures of firm-specific crash risk, we find that both the holding and trading of dedicated (transient) institutional investors are significantly associated with lower (higher) crash risk. The positive relation between transient ownership and crash risk is consistent with the notion that bad-news hoarding is exacerbated by the weak monitoring of transient investors due to their small position and short holding period. We do not make predictions regarding quasi-indexers because it is unclear a priori if they are effective monitors. On the one hand, some quasi-indexers, such as California Public Employees' Retirement System (CalPERS), are active in targeting poor performers for governance activities. On the other hand, quasi-indexers are not willing or able to actively monitor all portfolio firms due to the extreme fragmentation of their ownership. Therefore, our tests instead focus on dedicated and transient institutions, whose characteristics offer a more clear implication for monitoring.

The literature shows that  $R^2$  plays important roles in a range of corporate policies, such as corporate investment, antitakeover provision, board structure, and insider trading (Chen et al., 2007a; Fernandes and Ferreira, 2009; Ferreira and Laux, 2007; Ferreira et al., 2011). This paper corroborates earlier research establishing a link between information, control rights, and  $R^2$ . We extend this line of research by shifting the focus from managerial behavior to investor interaction and provide further evidence for Jin and Myers (2006). Our paper is also related to Piotroski and Roulstone (2004), who study the relation between  $R^2$  and institutional trading, in addition to analysts following and insider trading. However, their important paper does not examine the crash risk. Moreover, they study the change of aggregate institutional ownership. By classifying institutional investors based on monitoring incentives, we highlight the heterogeneous effects of institutional investors on both stock price synchronicity and crash risk. Furthermore, the results regarding crashes contribute to the emerging literature on the extreme outcomes of the stock market, which significantly impact investor welfare and hence are of great concern of market participants. As Hutton et al. (2009) point out, a better understanding of the factors that predict stock price crash allows for sharper option pricing, which depends on skewness and crash risk. It also has important applications in portfolio and risk management, which focuses on tail risk, such as value at risk.

The remainder of this paper is organized as follows. Section 2 reviews related literature and develops the empirical predictions. Section 3 describes the data and variables. Section 4 discusses the empirical design and findings. Section 5 provides robustness checks and additional tests. Section 6 examines the financial firms during the financial crisis, and Section 7 concludes the paper.

## 2. Related literature and hypothesis development

The literature on stock price synchronicity has been growing since Roll (1988). Morck et al. (2000) find that average market model  $R^2$  and other measures of stock market synchronicity are higher in developing countries, and propose that poor protection

<sup>3</sup> John Bogle, the founder of the Vanguard Group, criticizes the short-term investment strategy and lists ten failures of the mutual fund industry in Bogle (2009). In particular, Bogle (2009, p. 20) observes that transient institutional ownership weakens corporate monitoring: "Failure to exercise adequate due diligence in the research and analysis of the securities selected for fund portfolios, enabling corporate managers to engage in various forms of earnings management and speculative behavior, largely unchecked by the professional investment community." "Failure to exercise the rights and assume the responsibilities of corporate ownership, generally ignoring issues of corporate governance and allowing corporate managers to place their own financial interests ahead of the interests of their shareholders."

<sup>4</sup> Gaspar et al. (2005) find that the weak monitoring of short-term shareholders enables managers to make undisciplined acquisitions at the cost of shareholders.

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