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Institutional ownership, analyst following, and share prices

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ABSTRACT

We study the mutual relationships between institutional ownership, analyst following and share prices. We show that the pressure on firms to set lower share prices to attract analysts is attenuated by institutional monitoring. Our theory refutes the assumed causal relation between share price and institutional ownership, attributed to the share price–liquidity relation, and we show empirically that share prices and institutional ownership are positively related after controlling for liquidity. Our study provides a rationale for why better firms generally maintain higher share price levels, and offers new insights into the puzzling empirical linkages observed between nominal share price levels and firm fundamentals.

1. Introduction

Institutional investors dominate US equity markets and have the ability to monitor the firms whose shares they own and increase information availability about these firms.[1] However, the effect of institutional monitoring and information generation on the determination of share price levels by firms has not been previously examined. We bring together three distinct strands of the literature that study the bilateral links between (a) analyst following and share price levels; (b) institutional ownership and share price levels; and (c) analyst following and institutional ownership.[2] Our analysis offers new insights into (a) the choice of share price levels by firms when they go public or split their shares and (b) the relation between share price level, institutional ownership, and firm value. We also provide a rationale for the puzzling empirical linkages documented in the literature between nominal share price level and fundamental firm characteristics such as the probability of bankruptcy, performance, size, liquidity, and trading volume.[3]

Brennan and Hughes (1991) and Angel (1997) provide the first critical insights into how stock price levels are linked to information generation by financial intermediaries. They study the relation between analyst following and share price levels, and argue that lower stock price levels will increase the incentive for analysts to generate information about a firm and promote its shares. Schultz

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[1] As noted by Gompers and Metrick (2001), institutional ownership of US stocks has grown dramatically since the 1980s. Brancato and Rabimov (2008) report that by the end of 2007, institutional investors accounted for 76.4% of the ownership in the largest 1000 US firms. For a discussion of the benefits to a firm brought about by institutional ownership, see Shleifer and Vishny (1986), McConnell and Servaes (1990), Smith (1996), Carleton et al. (1998), Gillan and Starks (2000), Allen et al. (2000), Hartzell and Starks (2003), Grinstein and Michaely (2005) and Boehmer and Kelley (2009).

[2] For the relation between share prices and analyst coverage, see Brennan and Hughes (1991) and Angel (1997). For the relation between institutional ownership and share price levels, see Falkenstein (1996), Gompers and Metrick (2001) and Fernando et al. (2004). For the relation between institutional ownership and analyst coverage see Bhushan (1989), Rock et al. (2001), Frankel et al. (2006) and Ljungqvist et al. (2007).

[3] See, for example, Maloney and Mulherin (1992), Muscarella and Vetsuypens (1996), Falkenstein (1996), Angel (1997), Seguin and Smoller (1997), Schultz (2000), Gompers and Metrick (2001), Fernando et al. (2004), Bradley et al., 2004, and Dyl and Elliott (2006).

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(2000) and Kadapakkam et al. (2005) provide empirical evidence consistent with the notion that analysts promote stocks following stock splits and confirm that splits cause stockholders to incur higher costs of trading that translate into higher revenues for market intermediaries, as surmised by Brennan and Hughes (1991) and Angel (1997).[4]

While providing valuable new insights into corporate decisions that determine nominal share price levels, these studies disregard the possibility that entities other than market intermediaries, specifically institutional investors, can also generate valuable information about firms. Apart from the institutional monitoring benefits noted earlier, there is considerable evidence that institutional investors have valuable private information about firms.[5] Indeed, Chen et al. (2011) provide important new evidence in this regard by showing (a) that firms do not always lower their stock prices through splits to disseminate favorable information and (b) that institutions are able to differentiate between informationally motivated splits and splits that aim to make stocks more attractive to uninformed investors. Therefore, extending the work of Brennan and Hughes (1991) and Angel (1997) to incorporate the information gathering role of institutional investors offers the prospect of providing new insights into two well-documented findings in the literature: (a) the preference of institutional investors for higher-priced stocks and (b) the positive association between share price levels and the value of the firm.[6]

We develop a model of nominal share price determination by firms that explicitly embodies the monitoring and informational benefits of institutional investment. Our model incorporates two types of investors: institutional and retail. Retail investors are unsophisticated and rely on outside sources, such as brokers and analysts, to provide them with information about stocks. In contrast, institutions monitor the firms whose stocks they own and help increase information availability about these firms by improving the effectiveness of analysts that cover the firm (Frankel et al., 2006; James and Karceski, 2006; Cornett et al., 2007; Ljungqvist et al., 2007; and Ruiz-Mallorquí and Santana-Martín, 2011).

In our model, firms select share prices by trading off the relative costs and benefits of institutional monitoring and analyst following. As suggested by Parrino et al. (2003), there is considerable variation across firms in their perceived benefits from institutional ownership. Firms anticipating smaller benefits from institutional ownership set lower share prices to increase the relative spreads associated with trading their shares and thereby induce more information generation by market intermediaries.[7] Firms anticipating larger benefits from institutional ownership set higher share prices to decrease the all-in cost to investors of owning their shares. Firms with higher price levels have higher institutional ownership than firms with lower price levels, and higher priced firms will also have a higher value than lower priced firms.

By explicitly incorporating the role of institutional investors, we reconcile the notion in Brennan and Hughes (1991) that firms with favorable private information should lower their share prices to disseminate this information through analysts, with the observed positive relation between institutional ownership and share price levels. Similarly, we also reconcile the argument in Angel (1997), that firms can increase their value by lowering share prices, with empirical evidence of a positive association between share price levels and the value of the firm. What we show is that while the relations in both Brennan and Hughes (1991) and Angel (1997) continue to persist when holding constant the influence of institutional investment on the firm, in the cross-section high-value firms will maintain higher share price levels, have more institutional investors and fewer analysts than similar sized low-value firms.

In addition to providing new insights into the relations among and endogeneity associated with several key firm-specific variables such as institutional ownership, analyst coverage, share price levels, stock market liquidity, and the value of the firm, our model also yields additional new empirical implications. First, while establishing a theoretical basis for the empirically observed positive relation between share prices and institutional ownership, we show that this relation exists independently of liquidity considerations, thus contradicting the widely-held notion that higher liquidity is what drives institutions to hold higher-priced stocks. Second, our model implies that the share price level will be an indicator of a firm's value. Therefore, we would expect to find a greater propensity for institutions to invest in higher priced stocks even in the absence of "prudent-man" rules that constrain them to do so.[8] Third, firms with higher levels of institutional ownership and higher values will choose higher split prices when they split their shares. Interestingly, though, our model further predicts that analyst coverage of such firms will be lower than analyst coverage of similar-sized firms with lower institutional ownership. This is because institutional investors reduce the need for firms to rely on costly information generation by analysts.

We find strong empirical support for our theoretical predictions. We conduct some of our empirical analysis using split prices to measure firms' preferred share price levels. In particular, while confirming prior findings that analyst coverage increases with market capitalization and declines with the share price level, we show that the number of analysts following a firm will decrease with the firm's information quality and with institutional ownership. This result contradicts Bhushan's (1989) finding of a positive correlation between analyst following and institutional ownership in his empirical analysis of the determinants of analyst following.[9] Our theory adds new insights into this issue by employing a structural model to delineate both the relationships and the endogeneity associated with these variables (see, for example, Coles et al., 2007), and also by highlighting the importance of the share price level, which is absent in the aforementioned studies.

We find that a firm's share price level rises with institutional ownership even after controlling for differences in stock market liquidity. The relation persists when we (a) exclude low-priced stocks to allow for the possibility that some institutions may be prevented from investing in them and (b) control for recent stock price run-ups. We also find that firms with higher values of Tobin's Q will target higher price levels when they split their shares. Tobin's Q is also positively related to both firm information quality and the precision of analyst forecasts. Furthermore, the values of

[4] Conroy et al. (1990), McInish and Wood (1992), and Stoll (2000) also provide evidence that stock splits are followed by an increase in trading costs and a reduction in market liquidity. Kadapakkam et al. (2005) document that lower-priced stocks have higher relative spreads even after decimalization, although the differences are lower in absolute terms. Moreover, the discussion and findings in Weld et al. (2009) and Goldstein et al. (2009) suggest that despite the growth of discount brokerages, many brokers still charge fixed per-share commissions.

[5] See, for example, Krigman et al. (1999), Wermers (2000), Cohen et al. (2002), Gibson et al. (2004), and Chen et al. (2011).

[6] For the preference of institutions for higher priced stocks, see, for example, Falkenstein (1996), Gompers and Metrick (2001), and Fernando et al. (2004). For the relation between share price levels and firm value, see, for example, Seguin and Smoller (1997) and Fernando et al. (2004).

[7] The benefits of institutional investment will vary widely across firms, depending on the extent and proprietary nature of firms' private information and the moral hazard problems associated with disclosing it (Brennan and Hughes, 1991), the cost of obtaining information through other channels (Diamond, 1985), the governance of the firm and the extent to which managerial behavior can be positively influenced by institutional investors (Denis and Serrano, 1996), and the costs incurred by firms due to institutional monitoring (Bushee, 1998).

[8] See, for example, Badrinath et al. (1989) and Del Guercio (1996). Our argument here is similar to the "ownership clientele" effect discussed by Allen et al. (2000), where higher quality firms attract relatively less-taxed institutional investors. As noted by Allen et al. (2000), such investors have a relative advantage in ensuring that the firms they invest in are well managed.

[9] Rock et al. (2001) replicate Bhushan's (1989) study using several alternative econometric models and also cast some doubt about Bhushan's original findings by arguing that they are not robust to the use of different empirical specifications.