Chapter 73

The Roles of Financial Analysts in the Stock Market

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CHAPTER OUTLINE:

Abstract:

Investors lacking ample time, professional knowledge, and sufficient ability may find it difficult to understand the implication of complex corporate information and figure out the clear trend of future corporate performance. Financial analysts who provide earnings forecasts and stock recommendations could help investors with investment decision-

making. This chapter explores the roles that analysts play in the stock market, the determinants of the effectiveness of their roles, and how well they play the roles.

Keywords:

Financial analysts, analyst coverage, analyst forecasts, information intermediation, external monitoring

73.1 Introduction to Financial Analysts

Financial analysts are often referred to as "sell-side" analysts, who are employed by brokerage houses to help listed companies sell issued stocks to a myriad of investors. To this end, analysts issue their equity-research reports, which incorporate their forecasts of firms' future earnings along with price targets and their stock recommendations opinions, to all stock market participants. Analysts provide this service in return for their hirers, brokerage houses, charging commission fees from both firms and investors for each stock transaction.

In making earnings forecasts and evaluating firm value, analysts rely on various corporate information including both financial and nonfinancial information (e.g., Chandra, 1975; Previts et al., 1994; Bouwman et al., 1995; Brown, 1997; Dempsey et al., 1997). Financial information comes mainly from financial statements, on which analysts rely heavily to assess a firms' performance, risks, and future prospects. Nonfinancial information relates to a range of major corporate events such as share issuances, share repurchases, dividend payouts, mergers & acquisitions, business expansion, changes in products or product lines, research & development, insider trading, managerial turnover, socially responsible investments and operations, and employee treatments. To the extent that the financial information and nonfinancial information are value-relevant, it would

be useful to analysts for their forecasts and equity valuation (e.g., Rogers and Grant, 1997; Rajgopal et al., 2003; Dhaliwal et al., 2012; He et al., 2019a). Many investors, especially retail investors, who are constrained in expertise, time, and experience to acquire and process value-relevant information, would rely on analysts' research reports to make investment decisions.

Unlike sell-side analysts, buy-side financial analysts are hired by, and report privately to, institutional investors, such as funds, investment banks, and insurance companies. Buy-side analysts provide more focused research reports that analyze how promising an investment is and how well it reconciles with the investment strategy of their employers. Since buy-side analysts' reports only satisfy the information needs of institutional investors who employ them, and are not made publicly available for all investors, their influences on the stock markets are limited. Therefore, this chapter reviews and discusses only the role sell-side analysts play in the stock market.

73.2 The Role Analysts Play in the Stock Market

Financial analysts play the role of information intermediation between firm management and stock market participants (e.g., O'Brien and Bhushan, 1990; Schipper, 1991). To fulfil the roles, they acquire and process varied value-relevant information, synthesize it in an understandable form in a research report, and disseminate it to the market. By providing forecasts and investment advice, financial analysts help market participants, especially less sophisticated retail investors, to interpret value-relevant information, assess corporate performance and risks, and infer future prospects of firms. Their role as information intermediaries, if effective, would improve information quality and increase the informational efficiency of stock markets.

Another main role analysts play in the stock market is external monitoring on firm management (e.g., Jensen and Meckling, 1976; Walsh and Swad, 1990). By analyzing corporate information on a regular basis, analysts can scrutinize and interfere with management in a way that prevents it from making suboptimal or value-destroying business decisions. Consistent with this notion, Wiersema and Zhang (2011) show that analysts help the board of directors to evaluate CEO effectiveness for firms by providing an independent assessment of the CEO's ability and her/his past performance. Meanwhile, in uncovering and disseminating information to the public, analysts help investors detect and curb managerial misbehavior. Dyck et al. (2010) provide evidence that it is analysts, rather than auditors or regulators, who play the most prominent role in detecting corporate frauds.

73.3 What Determine the Effectiveness of the Roles Analysts Play in the Stock Market?

Whether and to what degree analysts act effectively on their roles as information intermediaries and monitors in the stock market are fundamentally determined by (i) the number of analysts that provide their service for firms and (ii) the quality of their service. Only in cases when a considerable number of analysts provide high-quality service, can their roles of information intermediation and external monitoring be realized effectively.

73.3.1 Determinants of Analyst Coverage

The number of analysts providing forecasts and stock recommendation opinions for a firm over periods of interest is termed analyst coverage or analyst following. It reflects analysts' decisions of providing their service after trading-off the expected benefits and

costs of doing so (Bhushan, 1989). The expected benefits for an analyst to cover a firm are determined by investors' demand for analyst forecasts. Investors tend to have higher demand for analyst service, when the risks and uncertainty of a firm are high, making it difficult to understand the value implications of various corporate news. In such a circumstance, analyst service is more valuable and in greater demand by investors, stimulating analysts to follow the firm (Chung et al., 1995; Barth et al., 2001; Lobo et al., 2012).

Yet a higher level of risks and uncertainty for a firm also requires analysts to devote more time and effort in collecting and analyzing value-relevant information to make an accurate forecast. As a result, the information acquisition and processing costs become higher, demotivating analysts to follow the firm (Chang et al., 2006). In essence, whether to follow a specific firm would rest on the trade-off between the foregoing benefits and costs of covering the firm. If analysts expect the benefits to be higher (lower) than the costs, they will increase (lower) their coverage on the firm. A great deal of existing research documents various firm characteristics that are associated with analyst coverage. Below we review this strand of literature:

Trading volume: As commission fees paid to financial analysts are based on stock trading volume, which reflects outside investors' demand for analyst service (Hayes, 1998), analysts are prone to follow firms that have high trading volume. An array of prior studies provides evidence of a positive association between analyst coverage and trading volume (Alford et al., 1999; Barth et al., 2001; Ahn et al., 2005).

Institutional stock ownership: A vast literature documents that institutional stock holdings spur demand for analyst service because institutional investors often seek analyst reports for fiduciary responsibility reasons (Bhushan, 1989; O'Brien and Bhushan,

1990; Ackert and Athanassakos, 2003).

Firm size: Analysts have great incentives to follow larger firms (Bhushan, 1989; Marston, 1996; Rajan and Servaes, 1997; Barth et al., 2001), as investors' demand for analyst service is greater for such firms, from which investors can earn more through their stock investments. In addition, compared with large firms, small firms tend to have weaker internal controls and are more likely to manipulate earnings (e.g., Kinney and McDaniel, 1989; Haw et al., 2004; Ge and McVay, 2005; Ashbaugh-Skaife et al., 2007; Doyle et al., 2007). Therefore, the information opacity is relatively high for small firms, increasing the information acquisition and processing costs for financial analysts (Ackert and Athanassakos, 2003; Lang et al., 2003). As such, analysts have weak incentives for coverage on small firms.

Business complexity: Analysts are reluctant to cover firms with a great number of business segments or business lines, as higher complexity of business implies an increased difficulty in forecasting. To decipher the overall performance of the whole firm, analysts need to devote more effort and time to analyze complex information from each segment. Consequently, the information acquisition and processing costs increase, deterring analysts from following such firms. (Bhushan, 1989).

Performance: Previous research has long argued that analysts prefer covering well-performing firms. On the one hand, investors have greater interest in investing in firms with good performance, so providing forecasts for such firms could attract more investors and more stock trading (Darlin, 1983; Hayes, 1998). On the other hand, analysts avoid issuing unfavorable opinions to firms that are expected to underperform, as it may jeopardize investment banking business (Darlin, 1983; Gibson and Wall, 1984; Siconolfi, 1992).

Quantity/quality of corporate disclosures: Analysts are attracted to cover firms that are more willing to provide quality information, as quality disclosures not only enable analysts to produce valuable new information, which increases investors' demand for analysts' reports, but also reduce information acquisition costs for the analysts (Lang and Lundholm, 1996). Consistent with this notion, prior studies (e.g., Healy et al., 1999; Botosan and Harris, 2000; Hamrouni et al., 2017) provide evidence that firms increasing their voluntary disclosures enjoy greater analyst coverage; prior research (e.g., Bushman et al., 2004; He et al., 2019) also offer evidence that high-quality disclosures reduce the information acquisition and processing costs for analysts and thereby attract more analyst following .

Geographic proximity: Geographic proximity provides analysts with information advantage and help them save the information acquisition and processing costs, to the extent that some value-relevant information has to be acquired via corporate site visits (Malloy, 2005; Bae et al., 2008; Brown et al., 2015). In line with this argument, previous research find that analysts prefer to cover local firms more than non-local ones (O'Brien and Tan, 2015).

Financial distress/constraints: Financially distressed firms are referred to as those that are unable to fulfill debt obligations in the foreseeable future. If the financial distress of the firms is prolonged, they would be likely to go bankrupt. Investors often avoid investing in financially-distressed firms as their stocks tend to have higher risks and lower returns. Thus, analysts are prone to cover financially healthy firms (Das et al., 2006; Lee and So, 2017).

73.3.2 Determinants of Analysts' Reporting Quality

Conditional on a considerable amount of analyst coverage at play, the extent to which analysts' role as information intermediaries and monitors are effective for investors hinges further on the quality of their equity-research reports. We focus on illuminating the quality of analysts' earnings forecast rather than that of stock recommendation for two reasons. First, analysts use their earnings forecasts as the basis to generate stock recommendation opinions (Loh and Mian, 2006), so the quality of earnings forecasts is pre-requisite and fundamentally shaping the quality of the whole report. Second, it is hard to quantify the quality of the stock recommendation opinions, whereas the quality of analyst earnings forecasts can be measured by different empirical proxies relating to the accuracy, informativeness, timeliness, and consistency of the forecasts. High-quality forecasts should be beneficial to investors for their investment decision-making.

73.3.2.1 The Incentives of Analysts

Analysts have strong incentives to expend effort towards making a high-quality forecast that caters for investors. Existing studies identify two major motivations that induce analysts to pursue high-quality forecasting: (i) promotion of investment banking business and increase in stock trading volume; and (ii) career advancements. On the one hand, analysts' compensation is tied to the volume of stock trades by investors, while analysts are under pressure by their brokerage houses to boost the investment banking business. Hence, analysts have strong incentives to provide high-quality forecasts beneficial to investors, thereby stimulating more stock trades and increasing lucrative investment-banking business for their brokerage houses (e.g., Stickel, 1992; Jackson, 2005; Ke and Yu, 2006; Groysberg et al., 2011). On the other hand, the quality of forecasts is associated with analysts' career prospects. Hong et al. (2000) find that forecast accuracy

increases the likelihood of analysts' career promotion, especially for less experienced analysts. Mikhall et al. (1999) provide evidence that analysts who make more accurate earnings forecasts are less likely to be dismissed, and therefore have the incentive to maintain the accuracy of earnings forecasts for investors.

Yet estimating earnings accurately is inherently difficult, as accruals, a key component of earnings, are of relatively lower persistence over years as compared to cash flows. Any misunderstanding of the business reality or news will cause accruals to depart from the realization of the initially expected amount (Nikolaev, 2018; Kolozsvari and Macedo, 2021). To see through this deviation and reach the accurate forecasts of earnings at relatively lower costs, analysts need to collect more private corporate information to develop a comprehensive understanding of the firm as well as the underlying events that will affect corporate performance. By integrating private corporate information in the business analysis and valuation, analysts can provide more accurate and valuable forecasts to investors, attracting more investors to trade.

However, after the implementation of Regulation Fair Disclosure in 2000, U.S. listed firms are prohibited from selectively disclosing material private information to a selected group of market participants, including analysts, without revealing the same information to the public simultaneously. As a consequence, analysts possess less information, losing the information advantages they previously enjoyed compared to investors (Unger, 2001; Wang, 2007). In such a case, analysts' own ability to process information becomes more important in determining the quality of their forecasts.

73.3.2.2 The Ability of Analysts

Even though analysts have incentives to offer quality forecasts, whether this objective

can be achieved depends on their ability to make quality forecasts, especially in the context of lacking privileged access to private corporate information. This forecasting ability depends on analysts' professionalism, experience, and sophistication in acquiring and processing information for their forecasts and valuation. The higher the ability, the lower the costs incurred for making quality forecasts, and more likely the forecasts would be of high quality and benefits to investors.

Ample evidence suggests that analysts are notably subject to three types of cognitive bias: limited attention, decision fatigue, and overconfidence, which would negatively affect their ability to process value-relevant information. Firstly, analysts might have limited attention when multiple firms in their coverage portfolios announce earnings on the same day, resulting in delayed and lower-quality forecast revisions (Driskill et al., 2020). In addition to this limited attention arising from excessive provision of information in their normal course of work, analysts may also display limited attention due to the distraction of other activities. For example, analysts tend to have limited attention to their work when the region in which they live experiences flu epidemics, and they are distracted by the sickness of family members or colleagues (Dong and Heo, 2014).

Secondly, analysts are subject to decision fatigue, which is defined as an ego depletion or a draining of mental resources after devoting effort to complex decisions over a period of time (Baumeister et al., 1998). Specifically, as the number of forecasts an analyst issue increases over the course of a day, s/he becomes fatigued and might be unable to invest the necessary mental resources to complete the following work. Therefore, the analyst is likely to make forecasts by using quick, easy, and intuitive cognitive processes rather than rigorous reasoning processes. Consequently, the forecast accuracy declines as the number of forecasts increases (Hirshleifer et al., 2019).

Thirdly, analysts appear to be overconfident in the value of their information and in their ability to forecast earnings (Friesen and Weller, 2006; Deaves et al., 2010). Bessiere and Elkemali (2014) confirm the analysts' overconfidence in their private information by showing that they tend to overreact (under-react) to private (public) information. Some other studies (e.g., Hilary and Menzly, 2006) find that past experience of good predictions leads to an illusion of control, which exacerbates analysts' overconfidence in their ability to process information, causing less accurate forecasts in subsequent periods.

Apart from the ability to process value-relevant information, analysts' choice of valuation approaches also influences their ability to forecast earnings accurately. Prior research (e.g., Block, 1999; Bradshaw, 2002 & 2004; Demirakos et al., 2004; Asquith et al., 2005) finds that analysts overwhelmingly rely on simple P/E or P/B multiple instead of cash-flows-based or earnings-based valuation models to derive their stock recommendation opinions. Although the price-multiple valuation approach focuses on the key financial figures that investors care about and is relatively simple to implement, such an approach would likely lead to misleading stock recommendation opinions due to the two limitations with the approach. First, it is often difficult to identify a comparable firm that has similar characteristics to the target firm being valued. Second, the comparable firm chosen could be mispriced by the stock market to a substantial degree. In sum, although analysts have the incentives to provide high-quality forecasts (and associated valuable stock recommendations) for investors, they might not always be able to do so due to the cognitive bias (and misuse of valuation approaches).

73.4 How Effective the Roles Analysts Play in the Stock Market?

On account of analysts' insufficient ability to process information for forecasts and

of their over-reliance on price-multiple valuation approaches for making stock recommendation opinions, a natural follow-up question to ask is whether analysts can still play their roles effectively as information intermediaries and monitors in the stock market? If they can, how effective will the roles be? We shed light on this issue by drawing on prior evidence on the economic consequences of analyst coverage on firms and by probing the quality of analyst forecasts.

73.4.1 The Consequences of Analyst Coverage

The economic consequences of analyst coverage on firms imply the effectiveness of analysts' role in the stock market. If their roles of information intermediation and external monitoring are effective, a high level of analyst coverage should trigger significantly positive economic consequences on firms. Otherwise, negative economic consequences might occur.

Extensive evidence illustrates that greater analyst coverage is associated with more efficient information transmission, lower information asymmetry, less underpricing of initial public offerings or seasoned equity offerings, lower costs of capital, and higher stock market liquidity (Bowen et al., 2008; Chang et al., 2006; Cheng and Subramanyam, 2008; Derrien and Kecskes, 2013; Kelly and Ljungqvist, 2012; Balakrishnan et al., 2014). Moreover, due to the external monitoring role played by analysts for firms, greater analyst coverage induces more timely and more informative voluntary disclosures by firms (Balakrishnan et al., 2014), restricts real-activities-based and accruals-based earnings management (Yu, 2008; Irani and Oesch, 2013 & 2016), reduces managerial expropriation of shareholders' wealth (Chen et al., 2015), curbs corporate tax avoidance (Allen et al., 2016; Chen and Lin, 2017; Chen et al., 2018), decreases insider trading (Wu,

2019), and lowers stock price crash risk (He et al., 2019b).

73.4.2 The Quality of Analyst Forecasts

The positive consequences of analyst coverage set out in Section 73.4.1 elicit indirect evidence on the effectiveness of the analysts' roles in the stock market. Direct evidence can be obtained by further examining the quality of analyst forecasts. It can be measured in terms of the accuracy, informativeness, timeliness, and consistency of the forecasts. Specifically, the forecast accuracy is measured by the extent to which analyst earnings forecasts deviate from the actual earnings announced by the firm. It is typically calculated by the absolute value of the difference between the actual earnings per share (hereafter, EPS) and an analyst's last forecast of annual EPS for a firm for a fiscal year, divided by the firm's actual EPS at the end of the fiscal year. If the analyst forecast of EPS is higher (lower) than the actual EPS, it is defined as an optimistically (pessimistically) biased forecast.

The informativeness of analyst earnings forecasts represents the degree to which the forecasts are useful and valuable to investors, and can be measured in three ways. First is the cumulative abnormal stock returns or stock trading volume during the three-day window centered on the date on which an analyst issues its forecast of EPS to the market. The second measure is the average daily bid-ask spreads during the three-month period that follows the analyst forecast issuance date. The spreads should be lower if analyst forecasts are informative of the firm's future prospect. The third measure is stock price synchronicity over the three-month period that follows the analyst forecast issuance date. The stock price synchronicity subsequent to an informative analyst forecast should be lower, meaning that more firm-specific information is impounded into the stock price as

a result of the forecast.

The timeliness of analyst earnings forecasts for a firm is determined by the time it takes for an analyst to make her/his forecasts since a news announcement by the firm. Taking analysts' responsiveness to earnings announcements as an example, the analysts' forecast timeliness can be measured either by (i) the number of days it takes for an analyst to issue her/his first forecast of EPS for the next year since the announcement of current EPS or (ii) the number of days between the date on the analyst forecasts of EPS for a fiscal period and the date on the announcement of the actual EPS for the period.

The consistency of analyst earnings forecast stands for the extent to which an analyst delivers consistent forecasts, which can be inversely measured by the volatility of analyst forecasts of EPS, or forecast errors, over time. Hilary and Hsu (2013) compute the analyst forecast consistency to be a ranking score equal to $1 - (rank - 1) / (the\ number\ of\ analysts\ following\ the\ firm - 1)$. *rank* refers to the ranking on the basis of the standard deviation of analyst forecast errors that are calculated as the difference between analyst forecast of EPS for a firm and the actual EPS of the firm at a fiscal period.

Based on prior studies on the properties of analyst forecasts, whether and to what degree analysts perform the effective role as information intermediaries for investors, and as external monitors for firms, are still inconclusive (e.g., Kothari et al., 2016; Rahman et al., 2019; He et al., 2019b). In general, academic researchers hold the view that analysts are, on average, more capable of processing value-relevant information than general investors are, though analysts might be at times constrained in their ability to process information (Chandra et al., 1999; Rajgopal et al., 2003; He et al., 2019b). This view is further supported by the prior evidence (e.g., Fried and Givoly, 1982; Brown et al., 1987) that analyst earnings forecasts are superior to the forecasts made based on a random-

walk time-series model. On a related note, prior studies (e.g., Elgers et al., 2003) provide evidence that investors are more sluggish in reacting to value-relevant news than financial analysts are, implying higher sophistication of the latter.

73.5 Conclusion

Financial analysts provide earnings forecasts and stock recommendations to investors, thereby helping them make good investment decisions. It is thus important to understand the roles analysts play in the stock market. To this end, we first introduce the jobs of analysts and then the roles they act as information intermediaries and external monitors in the stock market. Further, we expound the incentives and ability of analysts that determine the effectiveness of their roles for firms and investors. Finally, we set forth how effectively analysts play their roles in the stock market. In a nutshell, although existing studies provide some evidence of analysts' sophistication in inferring the implications of various value-relevant information for firm future prospects, to what extent analysts help investors with their investments and in a way that increases the efficiency of resource allocation in the stock market is still an open question that warrants further research.

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