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경영학 석사학위논문

**The Effect of Investment Analysts'
Recommendation on Firm's
Strategic Change**

증권 애널리스트의 기업 평가가 기업의
전략 변화에 미치는 영향에 대한 연구

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서울대학교 대학원

경영학과 경영학 전공

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ABSTRACT

The Effect of Investment Analysts' Recommendation on Firm's Strategic Change

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Despite the growing literature of the role of investment analysts influencing firm behavior, researchers have still not addressed whether pressures from investment analysts affect firms' strategic change when firms are under general business conditions. The research questions that guide through this study is largely two parts: can external constituents, such as investment analysts, affect firms' strategic change, and which firms or CEOs are more malleable to such external pressures, resulting greater strategic change at firms. Drawing upon institutionalism and behavioral theory of the firm, I hypothesized that investment analyst recommendations influence firms' strategic changes and this effect is amplified when firms' prior performance is low, and when CEO's career horizon is long. Drawing from the sample of 86 firms in the manufacturing industry, results show that negative analyst recommendations trigger strategic change at firms, and especially those with poor prior performance show greater strategic change.

Keywords: Strategic Change; External Pressure; Investment analyst recommendations; Upper-Echelons Theory; Performance Feedback Theory

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I. INTRODUCTION

Organization and strategy theorists have heavily studied strategic change in various facets exploring its effects on firms' outputs, such as performance measures (Hambrick and Schechter 1983, Zajac and Kraatz 1993, Rajagopalan and Spreitzer 1997), or the triggers that initiate strategic change at firms (Gioia and Chittipeddi 1991). More specifically, the decisions which initiate strategic change at firms have been comprehensively studied based upon the behavioral theory of the firm (Cyert and March 1963), as this theory emphasizes the decision-making processes of fundamental decisions, such as resource allocation of the firm. Naturally, a large body of prior research has explored strategic change based upon two streams of the behavioral theory of the firm (Cyert and March 1963): the performance feedback theory (Greve 1998) and the upper-echelons theory (Hambrick and Mason 1984). This is because studies of organizational change occurring in response to performance feedback theory have largely focused on past performance measures such as return on assets or sales (Audia, Locke et al. 2000, Audia and Greve 2006), which are often key decisions made by top-level managers as organizational goals (Gavetti and Levinthal 2004). Thus, it is quite natural that many researchers studied strategic change in relation to the upper echelons theory, such as exploring the effect of CEO characteristics or top-management team diversity on strategic changes (Wiersema and Bantel 1992, McDonald and Westphal 2003, Zhang 2006).

As the process of decision-making and firms' change is more keenly related to the behavioral theory of the firm, research in the strategic change

literature has less addressed how pressures from institutional environments influence firms' response to deteriorating performance or environmental conditions (DiMaggio and Powell 1983, King 2008). This is quite unexpected considering the ample amount of research in institutional theory aiming to uncover how various institutional pressures shape organizations (DiMaggio and Powell 1983). More specifically, it is only recent that researchers have begun to explore how investment analysts from stock markets can act as a source of external institutional pressure on firms. Counting the list of studies performed to investigate the relationship of stock market reaction to firm's strategic decision or action, it is difficult to understand why strategy theorists have given such little attention in this area. Fortunately, a growing number of scholars have begun to study how "sell-side" investment analysts, as intermediaries in public equity markets, can be a source of external institutional pressure on firms (Zuckerman 2000, Westphal and Clement 2008, Benner 2010, Westphal and Graebner 2010). And recent studies have explored how these investment analysts come to influence a firm's strategic decisions (Wiersema and Zhang 2011, Benner and Ranganathan 2012).

Despite such findings, researchers have still not addressed whether pressures from investment analysts affect firms' strategic change when firms are under non-specific environmental context such as radical technological shift or financial crisis. Also, there has been no research investigating the impact of external constituent pressures on firms' strategic change when reconciled with firm-specific factors such as firms' financial situation or more specifically with the top-management-team interests.

Therefore, the research questions that guide through this study is

largely two parts: can external constituents, such as investment analysts, affect firms' strategic change, and which firms or CEOs are more malleable to such external pressures, resulting greater strategic change of firms. Drawing upon institutionalism and behavioral theory of the firm, I hypothesize that investment analyst recommendations influence firms' strategic changes and this effect is amplified when firms' prior performance is low, and when CEO's career horizon is long.

This study makes contributions, as it is the first to look at the direct relationship between investment analyst recommendation and firms' strategic change under general business contexts. Further, by looking at the competing pressures of institutional and behavior of the firm theory, this study shows how certain firm characteristics amplify the degree of strategic change when institutional pressures are exerted. Thus, this model proposes that investment analysts can be more influential in some contexts than in others.

II. LITERATURE REVIEW, THEORY AND HYPOTHESES DEVELOPMENT

2.1 Investment Analysts and Strategic Change

Investment analysts (to be more precise “sell-side” analysts employed by brokerage firms,) play an important role as prominent information intermediaries in the financial markets. They represent an important external control mechanism and can reduce the agency costs associated with the separation of ownership and control (Jensen and Meckling 1979). To regularly report target companies’ earning forecasts and stock recommendations, investment analysts constantly collect, process and disseminate valuable information about companies (Benner and Ranganathan 2012). Most importantly, the reports that they produce give great consequence to many market participants (Fogarty and Rogers 2005), as these are thought to be neutral and independent, based on their specialized monitoring activities with expertise on a focused number of companies in particular industries. Prior research has shown that via earnings forecasts and stock recommendations, analysts can affect investor’s decisions (Womack 1996, Barber and Odean 2001). More specifically, studies have found that analyst coverage, the number of investment analysts providing research reports for a firm, not only increases the firm’s market value but also the firm value by reducing specific costs associated with firm monitoring by investors(Chen and Steiner 2000). Moreover, it has been suggested that investment analyst recommendations can influence firm’s stock demand and stock price, as the impact of being downgraded to a ‘sell’ has a much greater stock price effect than being

upgraded to a 'buy' (Stickel 1992, Womack 1996).

As public companies are dependent on the financial markets to access capital, firms are attentive to their stock price and the relevant activities that influence the stock value (Zuckerman 2000). Since investment analyst recommendations affect investors' perception and behavior on firms, one can expect that firms will stay observant to these recommendations and will attempt to elicit positive evaluations from investment analysts. In particular, Westphal and Clement discovered that corporate leaders enhance and perpetuate external support for their firms via social influence processes that develop and maintain social exchange relations with investment analysts (2008). The firm will want to maintain the support of the investment community and, thus, respond to analyst recommendations when they are negative.

Thus, viewing investment analysts as a key external constituent and as legitimate third-party evaluators, it is possible to draw upon the institutional theory to explain their influence on firm's strategic decisions. Institutional theory, which focuses attention on how "pressures for legitimacy from external institutions can cause firms to change their activities to conform to these institutional expectations or norms (Greenwood and Hinings 1988)", provides a valuable view on understanding the impact of investment analyst recommendations on firms. Recent research by Wiersema and Zhang (2011) showed that as external constituents, investment analyst recommendations increase the probability of CEO dismissal, which is a crucial corporate decision that can greatly affect firms' strategic direction (Hambrick and Mason 1984). However, the decision of CEO dismissal itself is more of a

decision made by board members, and it is difficult to view it as a purely strategic one. The question is can investment analyst recommendations exert pressure on firms to provoke specific strategic changes at firms? Benner and Ranganathan (2012) has revealed that pressures from investment analysts can affect firms' strategies by triggering changes in strategic investments during periods of technological change. However, such influence was studied focused on firms that were facing radical technological shifts. To examine how investment analyst recommendations influence a firm's key strategic decisions under general conditions, the firm's degree of strategic change must be studied.

Strategic change involves "an attempt to change current modes of cognition and action to enable the organization to take advantage of important opportunities or to cope with consequential environmental threats" (Gioia and Chittipeddi 1991). Strategic change can be defined in different ways, as in some studies it has been defined as the geographic diversification level (Sanders and Carpenter 1998), R&D investment intensity (Hoskisson and Hitt 1988), or the level of product diversification (Wiersema and Bantel 1992). It can be also thought of as the change in resource allocation, as strategy is viewed as the pattern in a firm's resource allocation (Mintzberg 1978). When strategic change is considered together with top managers at firms, it is oftentimes defined as the overall change in a firm's pattern of resource allocation in multiple key strategic dimensions (Finkelstein and Hambrick 1990, Carpenter 2000, Haynes and Hillman 2010, Zhang and Rajagopalan 2010). This is probably because the key dimensions soundly reflect the top managers intention of which area the firm will spend more resources on. As I

plan to examine which CEOs make firms more susceptible to negative investment analyst recommendations, I conceptualize strategic change as the variation over time in a firm's pattern of resource allocation in key strategic dimensions that goes beyond industry-wide changes in these dimensions (Zhang and Rajagopalan 2010).

As explained above, investment analyst recommendations can influence investor behavior and perception on firm. More precisely, when investment analysts issue negative earning forecasts and recommendations, the firm's market value decreases (Stickel 1992, Womack 1996). Analysts are more likely to drop coverage, and thus reduce stock price, in situations when firm's strategies diverge from the actions anticipated appropriate for firms within a particular industry (Zuckerman 1999, Litov, Moreton et al. 2012). Further, Zuckerman (2000) showed that these stock price pressures trigger changes in firms' strategies toward greater alignment with analysts' views. Thus, analysts' recommendations indicate the level of their agreement to firms' actions that they believe will increase the firms' stock value (Benner and Ranganathan 2012). Firms will receive positive feedback from analysts when this level of agreement between analysts' opinion and firms' strategic decisions is high. As a sign of confirmation and support for firms' strategic direction, they will continue to carry out their current strategies, when positive feedback is salient from analysts. In contrast, unfavorable recommendations reflect analysts' belief that firm's strategic direction will not create value. As noted above, analysts' recommendations reflect their belief and congruence to firms' strategic direction. Thus, I believe that changes in these recommendations indicate "a change in the extent of fit between a firm's

actions and analysts' beliefs about factors that increase the value of its stock" (Benner and Ranganathan 2012). Firms' decision makers will notice this change in recommendation, and will likely to adjust their strategies if analysts' change in recommendation is in an unfavorable direction. As public firms are sensitive to their stock prices, firms will respond to the pressures exerted by negative analysts recommendations, by altering their strategic direction in attempt to realign it with the analysts' views. Thus, when negative analysts recommendations are received, firms will execute strategic change to conform to analysts' expectations. Therefore, I believe that negative analysts recommendations will influence firms' strategic direction, and will incur strategic change:

Hypothesis 1:

Hypothesis 1a: A lower average analysts' recommendation will lead to greater strategic change at the focal firm.

I also believe that not only the average recommendation itself, but also how prevalent the negative view is among analysts, will influence firms' strategic direction. This is because firms will give greater attention to the analysts' voices when cohesively negative recommendations are conveyed. Thus, I hypothesize that:

Hypothesis 1b: A greater convergence of negative analyst recommendations will lead to greater strategic change at the focal firm.

By examining these dimensions of investment analyst recommendations, I expect to gain a more thorough understanding of how such evaluations from key external constituents can affect firms' strategic change.

2.2. The Moderating Role of Firm Prior Performance:

Performance Feedback Theory

The chance of whether a firm will change its strategy in response to the analyst recommendations will not only depend on the ratings themselves, but also on the situation the firm is facing. A major factor that determines the firm's situation is the firm's prior financial performance, as it gives clear information regarding the firm's well being. An ample amount of studies have shown that low firm performance may trigger strategic change at firms. Many of these studies are based on the performance feedback theory, which is one of the major relational concepts in the behavioral theory of the firm. The performance feedback theory is based on the premise that performance below aspirations initiate search for solutions (Cyert and March 1963).

Performance feedback theory emphasizes that firms with performance below aspirations initiate search for solutions and thus examine the tendency of low-performing organizations to strive more and expect less (Greve 1998, Gavetti, Greve et al. 2012). More specifically, it is conveyed by performance feedback theorists that poor performance indicates that a firm's decisions are not well suited for its environment and encourages decision makers to seek for

solutions that could ameliorate the situation (Desai 2008). There is significant evidence of organizational change occurring in response to performance feedback, and also some indirect evidence that search is more likely to be triggered by quantitatively measurable goals, or those goals that can be directly attributed to the actions of a certain organizational units (Cyert and March 1963). Thus, one can assume that when a firm's prior performance is low, the firm will initiate search for solutions, recognizing that their current strategy is not well suited to their contextual environment.

However, it is a stretch to assume that firms will make organizational or strategic changes solely based on their prior performance record, as the probability of change does not depend only on performance (Greve 1998). Organizations may exhibit resistance to change due to various reasons, such as managers may interpret performance feedback in ways that allow the organization to stay inert (Milliken and Lant 1990), or as decision makers face heightened uncertainty from transformed course of actions may make them reluctant to change. Drawing upon the performance feedback theory, change must be seen as an outcome jointly determined by motivation to change, opportunity to change, and capability to change (Greve 1998), and this allows us to reason that unfavorable analysts' recommendations can encourage firms with poor prior performance to initiate strategic change, as public firms will be highly motivated to fulfill analysts' expectations on firms' strategic direction and resource allocation pattern. Thus, if a firm has had low past financial performance, it is more likely that the firm will respond to investment analysts' negative recommendations by changing its resource allocation pattern (i.e. strategic change) to signal that the firm's interest and

investors' interests are aligned. For a company with unfavorable analyst stock recommendations, but good financial performance, the management is likely to disregard the negative news conveyed by analyst recommendations and thus be less likely change firms' strategy. Therefore, I hypothesize that based on the performance feedback theory, firms will be further motivated by analysts' recommendations to make strategic changes when their prior performance is low.

Hypothesis 2:

Hypothesis 2a: When firm's prior firm performance is low, the effect of lower average analysts' recommendation on strategic change will be greater.

Hypothesis 2b: When firm's prior performance is low, the effect of greater convergence of negative analyst recommendations will lead to greater strategic change at the focal firm.

2.3. The Moderating Role of CEO Career Horizon:

Upper-echelon Theory

A major stream of strategic management that closely goes hand-in-hand with the performance feedback theory is the upper echelons theory (Hambrick and Mason 1984), which holds a basic premise that top executives play a critical role in formulating strategy. According to Hambrick and Maosn, top managers or the dominant coalition (Cyert and March 1963) make

corporate decisions on the basis of how they perceive and interpret their strategic situations they face, and these interpretations are a function of an accumulation of the top managers experiences, values, and personalities. After the documentation of the upper-echelons theory, countless studies have spun-off exploring the role of CEOs and top managers in strategic decision making, and some scholars explained that a CEO is “someone who has primary responsibility for setting strategic directions and plans for the organization, as well as responsibility for guiding actions that will realize those plans” (Gioia and Chittipeddi 1991). It has become quite difficult to dispute the common assumption that CEOs and top managers determine corporate strategies, as empirical research on upper echelons theory have consistently demonstrated one can predict firms’ strategic direction based on CEOs’ or top management teams’ characteristics.

Previous studies have suggested that strategic change depends upon the organizational conditions under which change is initiated and implemented (Rajagopalan and Spreitzer 1997). As CEOs and top managers are critical players in formulating corporate strategies, their roles must be also highlighted at firms undergoing strategic change. This perspective has been accentuated by empirical research examining the relationship between new CEOs and strategic changes initiated by these CEOs (Sambharya 1996, Boeker 1997, Kraatz and Moore 2002). Thus, executive leadership must be viewed as a salient factor for understanding the organizational condition triggering strategic change (Virany, Tushman et al. 1992). Following this reasoning, examining how CEOs can amplify or repress the relationship between the investment analysts’ recommendations and firms’ strategic

change can reveal exciting explanations on institutional pressure under firm-specific context.

According to Fama (1980), external career concerns reduce agency problems between managers and shareholders. His assertion is that managers with superior performance generate high-wage offers, while managers with poor performance generate low-wage offers. These external labor market effects help discipline managers to work in the interests of shareholders. Holmstrom (1982) provides a model in which career concerns provide important incentives. In his analysis, however, managers tend to work too hard in their early years, while the market is assessing ability, and less harder in later years of their career (Brickley, Linck et al. 1999). Considering the role of investment analysts in the capital market, one can assume that CEO career horizon, which is the amount of time remaining until a CEO reaches retirement age (Matta and Beamish 2008), will act as an important factor explaining why certain firms under the leadership of certain CEOs are more susceptible to negative analysts' recommendations.

By definition, a CEO's career horizon is a function of the CEO's age and the upper echelons theory suggests that as CEOs grow older, not only their tendency will transform to exhibit more conservative and risk-averse actions (Barker Iii and Mueller 2002), but also their priorities and incentives will change as they come closer to their retirement (Brickley, Linck et al. 1999). These characteristics of CEOs with older age and shorter career horizon are explained in detail by Hambrick and Mason (1984): (1) Older executives may have less physical and mental stamina (Child 1972), and thus may be less capable of generating new ideas and learning new patterns of

behaviors, (2) they may also have “greater psychological commitment to the organizational status quo” and thus may be reluctant to any type of change at firms, and finally (3) financial security and career security can be critical at their stage of life, and thus may inhibit risky behaviors and decisions. The specific question I hope to explore in this section is then, how do these characteristics of CEO age and career horizon interact with external pressures exerted by investment analysts, who play critical role in evaluating CEOs performance and even having the power to influence board members to dismiss CEOs (Wiersema and Zhang 2011).

As noted above, CEOs tend to work harder in their early years, when they have a long career horizon ahead of them and are actively evaluated by external and internal stakeholders (Brickley et al., 1999). Upper echelons theory explains that older CEOs with a few years left until their retirement, will tend to avoid risk-taking actions, as this can possibly harm their reputation or shatter their life-long achievements. How would these two different CEO types respond to negative analysts’ recommendations, and eventually make decisions affecting firms’ strategic change? According to Hambrick and Fukutomi, CEO paradigms evolve as their tenure increases. In the beginning of their tenure, newly appointed CEOs develop their knowledge on how the firm should be managed, but after accumulating such knowledge and resources, CEOs become less interested in receiving or accepting new information and become hesitant to initiate strategic change (Hambrick and Fukutomi 1991). Although this study does not directly look at CEO career horizon, but CEO tenure, I can gain insight on how CEOs with long or short career horizons will react to information conveyed by investment analysts.

CEOs with longer career horizon will be more flexible and lenient in accepting analysts' opinion, as they will be more willing to accept new ideas and implement those ideas if thought to be reasonable. Also, considering that CEOs with long career horizon will be more sensitive to how they are evaluated from the external labor market due to their high career mobility, it is likely that these CEO types will better accept and reflect analysts' recommendations to firms' strategies, especially if the recommendations are unfavorable. Therefore, I expect that CEOs with long career horizon will be more malleable to analysts' recommendations, amplifying the relationship between analysts' recommendations and firms' strategic change.

Hypothesis 3:

Hypothesis 3a: When CEO's career horizon is long, the effect of lower analysts' recommendation on strategic change will be greater.

Hypothesis 3b: When CEO's career horizon is long, the effect of greater convergence on negative analyst recommendations will lead to greater strategic change at the focal firm.

III. METHODS

3.1. Sample

The sample for this study includes manufacturing companies listed in the Fortune 500 in the year 2005. Such sample was chosen, as I needed to identify firms that are widely traded in the stock market, and thus are closely monitored by the investment community. I tracked these firms over a ten-year period – 2002-2011. Out of the 500 firms, there were a total number of 86 firms in the manufacturing sector with information recorded in COMPUSTAT. I traced the yearly information of the CEOs of firms in the sample and obtained a final sample of 378 observations for data analyses.

3.2. Measurements

3.2.1 Dependent Variable

Based on previous studies (Carpenter 2000, Zhang 2006, Zhang and Rajagopalan 2010), and coherent to the conceptualization of strategic change in this study, six key strategic dimensions were used to create a composite measure of strategic change: (1) advertising intensity (advertising/ sales), (2) research and development intensity (R&D/sales), (3) plant and equipment newness (net P&E/gross P&E), (4) nonproduction overhead (selling, general, and administrative [SGA] expenses/sales), (5) inventory levels (inventories/ sales), and (6) financial leverage (debt/equity). These dimensions capture distinct aspects of a firm's strategic profile (Finkelstein and Hambrick, 1990). Data on these six strategic dimensions were obtained from COMPUSTAT. The differences in these ratios between the current and prior

year were calculated — for example, Δ firm R&D intensity = (firm R&D intensity_t — firm R&D intensity_{t-1}). Then, the industry effect was adjusted by subtracting the industry median changes in these ratios. For example, industry-adjusted Δ R&D intensity = (firm R&D intensity_t — firm R&D intensity_{t-1}) — (industry median R&D intensity_t — industry median R&D intensity_{t-1}). As a final step, I calculated the absolute values of the industry-adjusted changes in these ratios and standardized the absolute values within the sample (mean = 0, standard deviation = 1). The average of the six standardized values was used as my composite measure of strategic change.

3.2.2. Independent Variables

Investment analyst stock recommendations in this study are analyzed in two measures: average analyst recommendations, and percentage of investment analysts that have issued sell or underperform recommendations. These measures were calculated from data gathered from the Institutional Brokers Estimate System I/B/E/S database. I/B/E/S uses a five-point recommendation scale, with a recommendation of 1 meaning ‘strong buy,’ 2 meaning ‘buy,’ 3 meaning ‘hold,’ 4 meaning ‘underperform,’ and 5 meaning ‘sell.’ Thus in the I/B/E/S’s scale, higher scores mean lower recommendations. I reversed this scale of measure so that lower scores mean lower recommendations in my analysis.

Average analyst recommendation is calculated by first, aggregating the scores of analyst recommendations received from all the investment analysts that follow the focal firm over the one-year period, then dividing this summed value by the number of analysts evaluating the firm. To ensure that

the focal firm has received an objectively negative recommendation, I subtract the firm average score from the industry average recommendation to ensure that negative recommendations indicate recommendations that are lower than the industry average. Thus, if a firm has received positive recommendations, better than the industry average, the average analyst recommendation will be negative since I subtract the firm average from the industry average. For my sample of firms, the average analyst recommendation ranges from -3.72 to 4.04.

Negative convergence of analyst recommendation is measured by the percentage of sell or underperform recommendations out of the total number of ratings received by investment analysts over the one-year period.

Firm performance is operationalized as the average three-year industry-adjusted annual return on equity (ROE) and was obtained by subtracting the industry median ROE from the focal firm's annual ROE. Data on firm ROE and industry median ROE were collected from COMPUSTAT.

CEO Career horizon was measured as the CEO age subtracted from the retirement year, assuming it to be 65years-old. The CEO age was calculated by subtracting CEO birth year from the current year. CEO information was gathered from company annual reports, SEC annual filings and Bloomberg Executive Database.

3.2.3. Control Variables

Firm size was controlled since larger firms are more closely scrutinized and extensively followed by the investment community. Also, change is known to be more difficult to execute at firms that are larger in size.

Firm size was operationalized as the logarithm of the firm's net income, gathered from COMPUSTAT. Firm age was also controlled as older firms tend to show greater inertia, and thus are more resistant to change. Firm age is measured by subtracting the firm-founding year from the current year. The firm-founding years were collected from firm annual reports or history sections of firm official websites. I also controlled for the influence of investment analysts other than average analysts' recommendation and convergence of negative analysts' recommendations. Analyst coverage, which is the number of analysts who follow a firm, was controlled since more extensive coverage implies the firm is of greater importance and attention, and thus implies that it is under greater scrutiny of the investor community. Change in the average analyst recommendations was also controlled to exclude affects coming from the change in ratings from previous year. Change in average analyst recommendation is measured as the difference between the current year's average analyst recommendations to the prior year's average analyst recommendation.

3.3. Analysis

Table 1 presents descriptive statistics and correlations for the dataset I use in my analysis. I conducted a fixed panel regression analysis using STATA 12.0. The Hausman test was used to evaluate whether the choice of a random effects model is appropriate for my data. The difference between a fixed-effects and a random effects model is that the random-effects model assumes that the unobserved firm heterogeneity is not correlated with the observed explanatory variables in the model.

IV. RESULTS

Table 1 reports the means, standard deviations and correlations of variables in this study, and Table 2 reports estimates of strategic change models. Model 1 included controls; Model 2 added the effects of ‘Prior firm performance’ and ‘CEO career horizon’; Model 3 added ‘Average analyst recommendations’; Model 4 added the effects of ‘Negative convergence of analyst recommendations’; Model 5 and 6 examined the interaction effect of ‘Prior firm performance’ with ‘Average analyst recommendations’ and ‘Negative convergence of analyst recommendations’; Model 7 and 8 added the interaction effect of ‘CEO career horizon’ with ‘Average analyst recommendations’ and ‘Negative convergence of analyst recommendations’. Table 1 shows that the explanatory variables have relatively low correlations among themselves, by reporting correlation parameters lower than 0.5. Also, the VIF (Variance Inflation Factor) scores reported on the very right-hand side of Table 1 indicates that all the variables are less than 3, confirming that there is low likelihood of a potential multicollinearity problem among the variables.

Hypothesis 1a, I predicted that lower than industry average analyst recommendations will lead to greater strategic change at the focal firm. As shown in Model 3, the coefficient for change in average analyst recommendation ($b = 0.09$, $p < 0.05$) is positive and significant. Thus, hypothesis 1a is supported. As shown in model 4, greater convergence of negative analyst recommendations ($b = 0.08$, $p < 0.05$) is shown to be positive and significant, thus hypothesis 1b, which predicted that greater convergence of negative recommendations will lead to greater strategic change at the focal

firm is supported. Thus, both hypotheses predicting whether negative analyst recommendations lead to strategic change at focal firms were supported.

Hypothesis 2a predicted that the effect of lower than industry average analyst recommendation would be amplified when firm's prior performance is low. As shown in Model 5, low prior performance ($b=-0.05$, $p<0.001$) was found to be significant when interacted with lower than industry average analyst recommendation. Thus, H2a is supported. Hypotheses 2b, testing the moderating effect of low prior firm performance with convergence of negative analyst recommendations was not supported.

Models 7 and 8, testing the moderating variable of CEO career horizon each with lower than industry average analyst recommendation and convergence of negative analyst recommendations were both found to be insignificant. Thus, hypothesis 3a and 3b were both rejected.

TABLE 1. DESCRIPTIVE STATISTICS AND CORRELATIONS

Variable	Mean	S.D.	Min	Max	1	2	3	4	5	6	7	8	9	VIF
1. Strategic Change	0.00	1.00	-0.97	8.34	1.00									1.13
2. Firm Size	9.51	1.00	7.64	12.98	-0.05	1.00								1.04
3. Firm Age	4.16	0.85	0.00	5.33	-0.01	0.11	1.00							1.10
4. Analyst Coverage	15.76	9.74	1.00	75.00	0.08	-0.04	-0.18	1.00						1.09
5. Change in Recommendation	0.00	1.00	-2.71	9.02	0.00	0.04	0.02	-0.07	1.00					1.35
6. Average Analyst Recommendation	0.00	1.00	-3.72	4.04	0.01	0.03	-0.03	0.05	-0.54	1.00				1.37
7. Negative Convergence	0.00	1.00	0.00	6.81	0.14	-0.01	-0.01	-0.06	-0.07	0.07	1.00			1.03
8. Prior Firm Performance	0.21	2.28	-26.24	24.61	0.00	0.02	-0.03	0.03	-0.03	-0.02	0.1	1.00		1.02
9. CEO Career Horizon	2.23	0.58	0.00	3.22	-0.02	-0.23	-0.05	-0.01	0.02	0.03	0.03	-0.09	1.00	1.04

Number of Observations = 378

Number of Firms = 86

TABLE 2. RESULTS OF ANALYSIS

Variable	Model 1	Model 2	Model 3	Model 4
Firm Size	-0.30** (0.11)	0.11 (0.19)	-0.30** (0.11)	0.08 (0.18)
Firm Age	-0.62** (0.24)	0.24 (0.49)	-0.65** (0.24)	-0.20 (0.43)
Analyst Coverage	-0.00 (0.01)	-0.01 (0.01)	-0.00 (0.01)	0.00 (0.01)
Change in Recommendation	0.00 (0.03)	-0.00 (0.03)	0.05 (0.04)	0.00 (0.03)
Prior Firm Performance		0.03 (0.02)		
CEO Career Horizon		-0.15 (0.10)		
Average Analyst Recommendation			0.09* (0.04)	
Negative Convergence				0.08* (0.04)
Prior Performance X Average Analyst Rec.				
Prior Firm Performance X Negative Convergence				
CEO Career Horizon X Average Analyst Rec.				
CEO Career Horizon X Negative Convergence				
Constant	5.55*** (1.37)	-2.86 (3.47)	5.64*** (1.36)	0.01 (2.31)
Observations	941	394	941	561
Chi-squared				

Standard Errors in Parentheses

+ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, * $p < 0.001$**

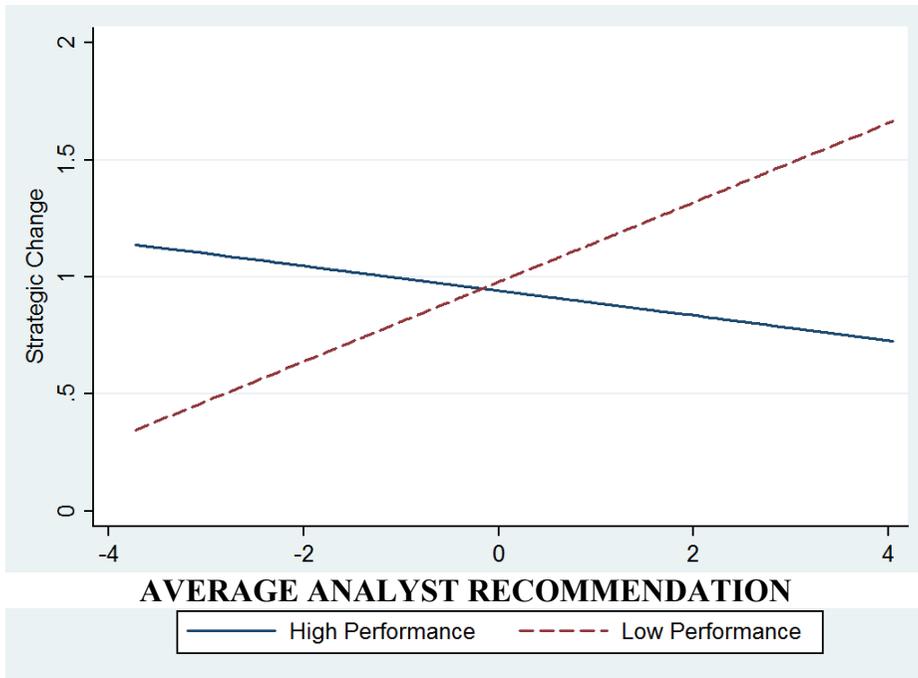
TABLE 2. RESULTS OF ANALYSIS (CONTINUED)

Variable	Model 5	Model 6	Model 7	Model 8
Firm Size	-0.14** (0.12)	0.13 (0.19)	0.10 (0.18)	0.11 (0.21)
Firm Age	0.08 (0.31)	0.03 (0.51)	0.15 (0.40)	0.00 (0.62)
Analyst Coverage	-0.01 (0.00)	-0.01 (0.01)	-0.00 (0.01)	-0.00 (0.01)
Change in Recommendation	0.03 (0.03)	-0.00 (0.03)	0.03 (0.04)	0.01 (0.03)
Prior Firm Performance	-0.01 (0.01)	-0.00 (0.02)		
CEO Career Horizon			0.03 (0.10)	0.00 (0.08)
Average Analyst Recommendation	0.07+ (0.04)		-0.03 (0.17)	
Negative Convergence		-0.00 (0.04)		-0.17 (0.13)
Prior Performance X Average Analyst Rec.	-0.05*** (0.01)			
Prior Firm Performance X Negative Convergence		0.02 (0.02)		
CEO Career Horizon X Average Analyst Rec.			0.04 (0.07)	
CEO Career Horizon X Negative Convergence				0.09 (0.07)
Constant	0.96 (1.66)	-1.40 (2.65)	-3.15 (3.31)	-0.95 (2.43)
Observations	782	489	442	424
Chi-squared				

Standard Errors in Parentheses

+ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, * $p < 0.001$**

**FIGURE 1. INTERACTION EFFECTS:
Strategic Change and Average Analyst Recommendation
(Hypothesis 2a)**



V. DISCUSSION AND CONCLUSION

5.1. Result Interpretation

The question of whether investment analyst recommendations can systematically influence firms' strategic change was initially triggered after reading an article describing the incident of the new CEO at Blackberry (RIM) altering the initially planned strategic direction after being heavily criticized by investors and investment analysts in 2012. I was interested whether credible constituents can alter a firm's strategic direction by exerting pressure to management and firm's internal procedures. The findings from the data analysis show that negative analyst recommendations do influence firm's strategic change. Thus, the general trend line is supported and further gives support to past studies that have found, as credible third party constituents; investment analysts can influence a firm's strategic decision (Benner and Ranganathan 2012; Wiersema and Zhang 2011).

As both hypothesis 1a and hypothesis 1b are supported, it is apparent that whether it is lower than industry average recommendation, or it is the convergence degree of negative recommendations, negative ratings can provoke firm's strategic change.

Hypothesis 2 predicted that firms with low prior performance would amplify the effect of negative investment analyst recommendations on firms' strategic change. Hypotheses 2 were partially supported as results showed that only the effect of lower than industry average analyst recommendation interacts with low firm prior performance. It was found that firm's low prior performance do not necessarily amplify the effect of convergence of negative

analyst recommendations on firms strategic change. This explains that when firms have been performing poorly, they become more sensitive to how they are being rated by investment analysts that follow their firm, in comparison to the industry average. As explained by the performance feedback theory, investment analyst recommendations that are lower than the industry average seems to act as a trigger, motivating those firms to initiate strategic changes at firms at a stronger degree. And it seems that firms are more greatly motivated when they feel they are falling behind their industry competitors. Thus, the signal given by investment analysts that a firm is lagging behind the industry average will motivate firms to take actions to improve their current situation by initiating strategic changes.

Hypotheses 3 predicted that CEO career horizon will moderate the effects of negative analyst recommendations on firms' strategic change. However, contrary to my expectation, the interaction effect of CEO career horizon was found to be insignificant. The reason behind this null hypothesis can be rooted from the way CEO career horizon is operationalized. In this study, CEO career horizon was operationalized as the function of the CEO's age. Thus shorter career horizon equally means that the CEO's age is older, while longer career horizon means CEO is younger at age. Although I initially expected that CEOs with longer career horizon are sensitive to how the external labor market is evaluating them, their long career horizon may also imply that they are young CEOs with more risk-taking tendencies that are unorthodox, and are less obedient to how internal or external stakeholders' expectations. Thus, the moderating variable of CEO career horizon could have worked both ways when interacted with negative analyst recommendations

for the firm. It is also possible that the small variance of CEO career horizon, ranging from 0 to 3.5 years until retirement age, may have restricted to raise meaningful differences between the interactions of negative analyst recommendations and CEO career horizons. If the operationalization I used in this study was imprecise at capturing CEO career horizon, future studies should generate alternative methods to gauge this measure in a more meaningful way, rather than simply using the function of CEO age.

5.2. Contributions

In this study, I examined and found supporting results for how investment analysts' negative recommendations influence firms' strategic change. I believe that it is one of the first studies to look at how analysts' recommendation affects firms' strategic decisions, and it adds to the stream of strategic change literature and investment analyst effect on firm behavior literature. This study is meaningful as it looked at the competing pressures of institutional theory and behavior of the firm theory, and showed how certain firm characteristics, such as prior firm performance, can amplify the degree of strategic change when external pressures are exerted. Also, by measuring strategic change with firm's resource allocation, this study examined how analysts' recommendations influence CEOs' or top-management-teams' decision on the overall firm strategic direction. This study can thus be added to the previous literatures that have investigated the impact of analyst recommendations on firm strategic decisions, such as CEO dismissal or R&D spending behaviors.

The results from this study also have practical implications firms and

key decision makers. By showing support for hypotheses 1a and 1b that negative analyst recommendations will lead to greater strategic change at firms, the study implies how firms today are attuned to the investment communities. Such finding helps one to infer that firms view opinions of investment analysts as credible sources of information, reflecting the expectations of shareholders and investors. Thus, for firms to stay competitive, it is important to accept the analyst recommendations and opinions as credible supplementary information that can provide hints of whether the firm is taking satisfactory strategic moves in the eyes of the investor community. Thus, CEOs and top-management teams should spend greater time and attention to manage these analysts so that information conveyed is well received and reflected to firms' strategic direction.

5.3. Limitations and Future Research

There are a number of limitations in this research and thus, spaces for improvement in future studies. From the methodological perspective, the 1) sample, 2) operationalization of CEO career horizon and, 3) capturing the effect of negative analyst recommendations are areas of further improvement.

In this study, only manufacturing firms were included in the sample for my data analysis, which means that the findings may have limited generalizability to firms in other contexts, such as smaller firms that are not listed in the *Fortune 500 Company*, or those that are highly diversified in multiple industries. Thus, future studies may include samples that are from multiple industries, and of multiple sizes to ensure that the findings from this study are still applicable to the general population of firms.

Another weakness of this study is that it was unable to prove CEO career horizon as a meaningful moderating variable that amplifies the effect of negative analyst recommendations on firms' strategic change. As mentioned above, CEO career horizon needs a better operationalization aside from its current function of age subtracted from the assumed retirement age of 65, as currently used in many studies. As most CEOs are older than younger, meaning that they have short career horizons than longer ones, it is difficult to capture the diverging affects of short versus long career horizons on the effect of negative analyst recommendations on firms' strategic change. Thus, in future studies, better operationalization that can effectively capture the variant affects of career horizon should be developed and used.

The last methodological limitation to note is the technique of measuring the relationship between negative analyst recommendations on firms' strategic change and prior firm performance. It was difficult to completely eliminate the potential endogeneity problem between prior firm performance and analyst recommendations. Although the multicollinearity test showed low correlation among the variables, future studies may examine this relationship with a more precise approach by minimizing the endogeneity problem between prior performance and analyst recommendations.

There are also some theoretical limitations that can be improved to further enhance and strengthen the findings of this study. From the stage of selecting the second moderating variable, which is the CEO career horizon in this study, I assumed that strategic decision and specifically strategic change is most powerfully initiated and directed by the CEO. However, according to the upper echelons theory (Hambrick and Mason 1984), examining the entire

top-management team rather than the CEO alone conveys greater information in understanding firm behavior. Thus, future studies may investigate certain top-management team characteristics that amplify the affect of analyst recommendations on firms' strategic decisions.

In addition to the abovementioned future research ideas that are mainly based on refining the limitations from this study, further light can be shed on this research topic by studying how firms' performance differ between those that implement strategic change after receiving negative analyst recommendations compared to those that resist to change even after receiving negative sentiment from the investor community.

In conclusion, this study is one of the first studies to examine the role of investment analyst recommendations in influencing the degree of firms' strategic change. While previous literatures have shown that poor firm performance and the perception of CEOs on situation they are facing may act as important antecedents of firms' strategic change, this study provides strong evidence than investment analysts have a separate effect on strategic change.

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국문초록

증권 애널리스트의 기업 평가가 기업의 전략 변화에 미치는 영향에 대한 연구

서울대학교 대학원
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변혜연

본 연구는 증권 애널리스트(Investment analyst)의 부정적 평가가 기업의 전략 변화에 어떠한 영향을 미치는지 살펴본 연구이다. 증권 애널리스트가 기업 행동에 어떻게 그리고 어떠한 영향을 미치는지에 대한 연구가 점점 증가하는 가운데, 여전히 애널리스트들이 기업의 전략 변화에 영향을 주는지 또한 기업의 전략 변화를 이끌어낼 수 있는지에 대한 질문은 연구되지 않은 상태이다. 기업 성과와 CEO의 Career horizon(퇴임까지 남은 기간)의 조절 효과가 애널리스트의 부정적인 평가가 기업의 전략 변화 정도에 어떤 영향을 미치는지 살펴봄으로써 어떠한 기업이 또한 어떠한 CEO들이 외부의 압박에 더 민감하게 반응하는지 살펴보았다.

주요어: 전략변화, 외부 압박, Performance Feedback 이론, 증권 애널리스트의 기업 평가, 최고경영진 이론

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