

Do governance reforms increase informativeness of analysts' stock recommendations? Evidence from a newly emerging market

Omar Farooq

Department of Economics

Swedish School of Economics and Business Administration, Helsinki, Finland

Sheraz Ahmed¹

Department of Finance and Statistics

Swedish School of Economics and Business Administration, Helsinki, Finland

Abstract

What happens to analysts' performance when market intermediaries are not governed properly? Using analysts' recommendation data from Pakistan, we find that analysts' performance deteriorate significantly as the governance of market intermediaries weakened. We argue that this decline in analysts' performance was partly due to stock price manipulation of market intermediaries who bent the laws of supply and demand in their favor by injecting or withdrawing liquidity from the market irrespective of fundamentals. They may have used their analysts to issue such recommendations that served their interests. We propose that improvement in firm-level governance mechanisms alone is not sufficient to develop capital markets in the newly emerging economies. The market intermediaries should also be subject to proper governance mechanisms.

JEL classification: G15; G24; G38

¹ Correspondence Address: Department of Finance and Statistics, Swedish School of Economics and Business Administration, P.O. Box 479, FI-00101 Helsinki, Finland.
Telephone: +358 50 9263 003
Email address: sheraz.ahmed@hanken.fi

Keywords: Corporate Governance; Governance Reforms; Regulatory Authority; Analyst Recommendations; Performance.

1. Introduction

Prior literature documents a strong link between improvements in corporate governance mechanisms and analysts' performance (Hope, 2003; Ashbaugh and Pincus, 2001; Chang et al., 2000). This strand of literature documents that analysts' performance is positively related to better corporate governance mechanisms, such as firm's adoption of international accounting standards, enforcement of accounting standards, and strength of investor protection or anti-director rights. These studies point out that improvement in corporate governance mechanisms reduce information asymmetries and add to the forecasting abilities of analysts. However, these studies do not address whether improvements in corporate governance mechanisms are able to produce desirable effects on analysts' performance in the presence of poorly governed market intermediaries – a very important issue in newly emerging markets. Does poor governance of market intermediaries decrease the beneficial effects of improvement in corporate governance mechanisms? Are there any implications for analysts' performance when legal and regulatory checks on market intermediaries are compromised? In this paper, we aim to fill this gap by documenting the performance of analysts when, on one hand corporate governance mechanisms have considerably improved and on other hand governance of market intermediaries has weakened.

Governance of market intermediaries in emerging markets has gained increased attention in the recent years. There have been several incidents of unscrupulous behavior of these intermediaries in some of the newly emerging markets. For example, the Securities and Exchange Board of India recommended the suspension of the broker member directors of BSE's board on the accusation of being responsible for the stock market crash of 2001. Similarly, task force committee, set up after the stock market crash of 2005 in Pakistan, reported in their findings that "there was a strong nexus between lenders and brokers/investors who could influence market sentiment to their own

advantage". Academic literature has also complimented these evidences by documenting the adverse impacts that poorly governed market intermediaries may have on other market participants. For example, Khwaja and Mian (2005), while studying the trading behavior of brokers in Pakistan, show that the brokers gain 50 to 90 percentage point higher annual returns than average outside investors when they trade on their own behalf. Such an undue advantage can be attributed to brokers' trading for themselves on their own recommendations prior to making them public. It will incorporate some of the information into the stock prices before recommendations are issued (Kyle, 1985). Prices will, in turn, react less to analysts' recommendations, and therefore cause a decline in analysts' performance. Moreover, if governance of market intermediaries is weak, analysts may be tempted to issue those recommendations that serve the interests of their employers rather than act as impartial pointers to existing misvaluations in stock market.

In this paper, we will study analysts' recommendations in Pakistan, a newly emerging market, during different governance regimes. Main motivation behind analyzing analysts' recommendations in different governance regimes is that each governance regime is characterized, on one hand by better corporate governance than the previous governance regime and on other hand by worse governance of market intermediaries than the previous governance regime. We define different governance regimes by the formation of Securities and Exchange Commission of Pakistan (hereafter SECP), an independent capital market watchdog. SECP was formed in January 1999 to oversee the efficient functioning of capital markets in Pakistan. Its main aim was to lay down the foundation of good corporate governance by building institutional, legal, and regulatory framework for the better management of the corporate sector entities. One of the highlights of SECP led reforms was the introduction of code of corporate governance in March 2002. It has made it mandatory for all firms listed on the stock exchange to follow the code of corporate governance. Formation of SECP resulted in improvements in corporate governance and disclosure mechanisms Rais and Saeed (2005), for example, document that SECP's governance reforms improved the overall corporate structure and business environment by making firms more responsible, and by ensuring transparency and accountability in the corporate and financial reporting framework. However, SECP's role as an effective regulatory and monitory body has attracted considerable discussion.

Critics have blamed SECP of not performing its role as an effective monitor and succumbing to the pressure of manipulative market players. For example, a quote from *The News*, an influential daily newspaper, sums up the critique on SECP as “firmness doesn’t appear to be the strong point of the Securities and Exchange Commission of Pakistan. ... What went wrong? Or, rather, how heavy was the pressure from vested interests? Were the members of the Karachi Stock Exchange so powerful that they managed to force the regulator to work in their interest? The SECP has not only proved to be a weak regulator but also exposed itself to the criticism that it acts first and thinks later” (*The News*, 2005).

These contrasting facts where, on one hand firm-level governance mechanisms improve, and on the other hand unscrupulous behavior of market intermediaries increase make careful reinvestigation of analysts’ performance a valuable task. We will document whether the improvement in firm-level corporate governance mechanisms are more important than the deceitful behavior of market intermediaries in explaining the performance of analysts in newly emerging markets. It is also worth mentioning that while the performance of analysts has been subjected to extensive research in the developed financial markets, it has received a very little attention in the newly emerging financial markets. We aim to fill this gap by documenting the performance of analysts in Pakistan, one of the fastest growing financial markets of South Asian region.

Following prior literature, we measure the performance of analysts by spread between their buy and sell recommendations. Jegadeesh and Kim (2006) consider this spread as the overall value of analysts’ recommendations. Moreover, the spread between analysts’ buy and sell recommendations is also considered as their ability to differentiate between well performing and badly performing firms.² We show that spread between analysts’ buy and sell recommendations decreased substantially in the post-SECP period. In fact, our results show no significant spread between analysts’ buy and sell recommendations in the post-SECP period. The spread between analysts’ buy and sell recommendations was higher in the pre-SECP period, when their buy recommended stocks outperformed their sell recommended stocks. Moreover, we also show that, on

² Well performing firms are expected to have higher returns than badly performing firms. On average, analysts’ buy recommended stocks should be able to produce returns that are, at least, greater than the returns produced by their sell recommended stocks.

average, spread between analysts' buy and sell recommendations was consistently greater in the pre-SECP period for all lead days. These results are contrary to our expectations of improved performance of analysts during the post-SECP period. It questions the effectiveness of regulatory reforms and the monitoring role of SECP. Our results are robust even after dividing the post-SECP period into the pre-governance code and the post-governance code periods. In fact, our results show that analysts' performance is the worst in the post-governance code period. Contrary to our expectations, this result shows that analysts' ability to differentiate between well performing and badly performing firms deteriorated significantly after the formation of SECP.

We also show that the performance of analysts' sell recommendations deteriorated significantly during the post-SECP period. Our results show that analysts' pre-SECP sell recommendations outperform their post-SECP sell recommendations. This result is also robust even after dividing the post-SECP period into the pre-governance code and the post-governance code periods. In fact, our results show that performance of analysts' sell recommendations deteriorate further after the issuance of governance code by SECP. However, our results show slight improvement in the performance of analysts' buy recommendations in the post-SECP period. Nonetheless, the superiority of analysts' buy recommendations is not robust if we divide post-SECP period into the pre-governance code and the post-governance code periods. We show that there is no significant difference between the performance of analysts' buy recommendations during the pre-SECP and the post-governance code periods.

This results documented in this paper are in contrast to our expectations of an improved performance of analysts during the post-SECP period due to improvement in governance and disclosure mechanisms. However, a careful look at our sample period reveals that the post-SECP period was marked by manipulation of prices by few influential brokers. Khwaja and Mian (2005) present evidence of how influential brokers manipulate the prices during the post-SECP period. They argue that SECP's policies fail to check vested brokerage interests who experienced an exponential growth in their wealth due to this price manipulation. They estimate a \$100 million (Rs 6 billion) a year transfer of wealth from outside investors to manipulating brokers, which is around 10% of market capitalization during their sample people.

The remainder of the paper will proceed as follows: Section 2 documents the governance reforms undertaken by SECP. Section 3 discusses the data used in this study as well as a discussion of summary statistics. Section 4 presents assessment of the performance of analysts' recommendations during different governance regimes, while Section 5 tests the robustness of our results. Section 6 will provide in depth discussion of our results. The paper ends with Section 7 where we present conclusions.

2. Governance reforms by SECP

Securities and Exchange Commission of Pakistan (SECP) was established to lay down the foundations of good corporate governance in Pakistan by building institutional, legal and regulatory framework (Rais and Saeed, 2005). Most of SECP's subsequent reforms were, therefore, aimed at establishing governance mechanisms that can persuade managers to act in the interest of outside stakeholders. These reforms paid special attention to a number of governance mechanisms such as adoption of international accounting standards, improvement of minority shareholder rights, enhancement of minority shareholders' participation in corporate decision-making, effectiveness of boards of directors, and improvement of governance of conglomerates' affiliated firms.

One of the most important aspects of SECP's reforms was to make it mandatory for the firms to follow the international accounting standards (IAS). Adoption of IAS requires firms to expand their disclosures and be more transparent, which considerably enhances the quality and timeliness of financial disclosure (Lowenstein, 1996).³ IAS also restricts firms' choices of accounting measurement methods. With fewer measurement rules to deal with, analysts should be better able to improve their performance. [Ashbaugh and Pincus \(2001\)](#) document that adoption of IAS is positively associated with the reduction in analyst forecast errors.

An important feature of Pakistani firms is the dominance of family controlled conglomerates. The conglomerates are usually characterized by nontransparent accounting, interlocking ownership between the corporate and financial sectors, and weak minority shareholder rights. As a result, owners of these conglomerates usually have the

³ SECP also enacted laws and regulations to require the disclosure of most non-financial items by firms as recommended by the OECD principles.

incentives to divert resources from the firms under their control. Prior literature has also highlighted the fact that family controlled conglomerates are hard to monitor (Chang et al., 2000). SECP, therefore, has issued specific guidelines to improve governance of conglomerates. For example, it now requires having more information on related party transactions. Auditors are expected to certify that the firm has followed certain valuation practices to determine transfer prices and that those valuation processes are used properly. All of these measures would decrease information asymmetries in family controlled conglomerates, so we can expect analysts to perform better for such firms in the post-SECP period.

SECP's reforms also addressed the issues regarding lack of minority shareholder rights and ineffectiveness of board of directors. [La Porta et al. \(1998\) hold these factors responsible for any deficiencies in information disclosure](#). SECP's reforms encouraged effective representation of independent non-executive directors, including those representing minority interests, on their boards of directors. The reforms strengthened the role of non-executive directors, restricting the percentage of executive directors to 75 in non-financial firms and recommending that institutional investors be represented as well. As a result of reforms, shareholders can, now, demand a variety of information directly from firms and have a clear right to participate in the annual general meeting of shareholders (AGM). Directors are elected using a form of cumulative voting⁴, and can be removed through shareholder resolution. Moreover, changes to firm's articles, increasing authorized capital, and sales of major corporate assets also require shareholder approval. With better minority shareholder rights and effective board of directors, information disclosure should improve resulting in better analysts' performance. Chang et al. (2000) document that improvement in the minority shareholder rights, and independence of board of directors is associated with higher analyst forecast accuracy.

Since 2002, SECP has made it essential for all listed firms to follow its corporate governance code issued. The corporate governance code, initially met resistance from the

⁴ Cumulative voting is a method of voting for corporate directors whereby each shareholder can multiply the number of shares owned by the number of directorships being voted on. The shareholder can then cast the entire total for only one director (or any other distribution the shareholder wants). It is a potentially important mechanism for large minority shareholders, particularly institutional investors, to have an effective voice; however, the mechanism has also given rise to some concerns about the possibility of board deadlock and antagonism between the board and management. Also the purpose of cumulative voting can be defeated by reducing the size of the board or using staggered terms of office.

market participants, however, strengthening of SECP's enforcement authority considerably improved the compliance with the governance code. Recent years have seen the imposition of more penalties, the introduction of new regulations, and a generally more activist regulatory approach by SECP. Since enforcement of regulatory reforms has improved after the issuance of governance code, analysts' ability to forecast and recommend should also enhance.

We argue that the reforms introduced by SECP improved the firms' governance mechanisms, and resulting in decrease in information asymmetries decrease (Chen and Jaggi, 2000; Eng and Mak, 2003). Financial analysts, being the natural users of the information, are, therefore, expected to benefit the most from governance related reforms (Lang and Lundholm, 1996; Abarbanell and Bushee, 1998; Lobo et al., 1998; Chiang, 2005).

3. Data

In this paper, we will focus on the performance of analysts in Pakistan using stock recommendations issued during the pre-SECP and the post-SECP periods. The pre-SECP period spans from November 1, 1993 to December 1, 1998, while the post-SECP period covers the time period from January 1, 1999 to December 31, 2005.

3.1. Stock prices and market index

We extracted stock price data and market index data from DataStream for the period under study. The stock price data was obtained for the day of recommendation and subsequent 1, 7, 14, 28, 56, and 112 days for the firms that were represented in analyst recommendations dataset. The market index used was the daily KSE 100 index data. Only those observations that have stock price data on the recommendation date and at least one of other subsequent dates are used in our study. We use stock price data and total market index data to calculate cumulative market adjusted returns.

3.2. Analyst recommendations

We obtain analyst recommendations data from the I/B/E/S International history recommendation database. I/B/E/S International history recommendation database provides a data entry for each recommendation announcement by each analyst whose brokerage house contributes to the database. Each observation in the database represents the issuance of a recommendation by a particular brokerage house for a specific firm. Therefore, there is no distinction in our sample between “analyst” recommendations and “brokerage house” recommendations.

I/B/E/S converts the original text recommendations provided by analysts to its own 5-point rating system. Recommendations in the I/B/E/S database are subsequently coded as: 1 = Strong Buy, 2 = Buy, 3 = Hold, 4 = Sell, 5 = Strong Sell. As is pointed out in Lai and Teo (2006), analysts in Asian emerging markets prefer to use 3-point rating scheme. Most of them rate firms as Buy, Hold, or Sell. In such cases, I/B/E/S maps them to 1, 3, and 5, respectively, in their 5-point rating system. Due to wide use of 3-point rating scheme by analysts, there are considerably few buy and underperform recommendations in our sample.⁵ Following Lai and Teo (2006), we aggregate I/B/E/S ratings 1 and 2 as buy, and 4 and 5 as sell throughout the study.

Table 1 presents summary statistics for our final dataset on analyst recommendations. Interestingly, our results show that analysts substantially reduced the coverage of firms in the post-SECP period. It is also worth mentioning that total market value of analysts’ sell recommended stock was substantially higher than the market value of buy recommended stocks in the pre-SECP period.

[Insert Table 1 here]

Table 2 shows the number and percentage of each type of recommendations issued by analysts during the two time period. The result shows that analysts substantially reduced hold recommendations in the post-SECP period. It may be the due to the fact that

⁵ In our sample, analysts issued 9.6% and 2.3% of their recommendations as “Buy” during the pre-SECP and the post-SECP period respectively, while they issued 3.4% and 0.4% of their recommendations as “Underperform” during the pre-SECP and the post-SECP period respectively.

the reforms initiated by SECP decreased the information asymmetries, and thus enabling analysts to take issue precise recommendations on stocks.

[Insert Table 2 here]

Table 3 shows that firms from ten different industries are represented in our sample. Our classification of industries is based on Industry Classification Benchmark (ICB). ICB classification has been created by FTSE. The table shows that analysts preferred financial sector in their recommendations in the pre-SECP period, while in the post-SECP period, they preferred basic material sector.

[Insert Table 3 here]

4. Empirical tests

The most obvious question, while analyzing recommendations, is whether or not recommendations predict returns. That is, do analysts uncover valuable information while making their recommendations? If so, their recommendations should predict future stock returns (Womack, 1996; Stickel, 1995). The information content of their recommendations possesses very significant information about the future stock returns. However, if the information they are revealing is already known to the public or is not valuable information, there should be no relationship between their recommendations and future returns. Moreover, more valuable information should produce returns that are higher than returns produced from less valuable information. We will use this property of market efficiency to determine the performance of analysts during the pre-SECP and the post-SECP periods.

4.1. Event-study analysis of the performance of cumulative market-adjusted returns following analysts' recommendations

In the section below, we will consider the performance of cumulative market-adjusted returns following analysts' recommendations. The methodology here is similar in spirit to that of Womack's (1996) study of analysts' recommendations in the US. For each buy and sell recommendation by analysts, we compute T-day cumulative market-adjusted returns, $CMAR_{S,T,t}$, on stock 'S' as follows:

$$CMAR_{S,T,t} = \prod_{t=0}^T (1 + R_{S,T,t}) - \prod_{t=0}^T (1 + R_{Mkt,T,t}) \quad (1)$$

Where $R_{S,T,t}$ and $R_{Mkt,T,t}$ are the T-day cumulative returns on stock 'S' and on KSE 100 index 'Mkt' respectively after the issuance of analysts' recommendation on day 't'.

We test whether, on average, analysts' buy and sell recommended stocks produced CMAR different from zero for lead of 'T' days or not. 'T' is equal to 1, 7, 14, 28, 56, and 112 days in our study. Table 4 documents CMAR for buy and sell recommended stocks in both time periods for different lead days. Our results show that analysts' sell recommendations were more informative in the pre-SECP period. We show that sell recommended stocks posted significant negative CMAR for all lead days during the pre-SECP period and for as much as 11.4 basis points, while in the post-SECP period the sell recommended stocks posted significant negative CMAR only for the lead of 112 days and by as much as 2.8 basis points. In case of buy recommendations, our results show that analysts' buy recommendations were more informative in the post-SECP period. We show that, on average, analysts' buy recommended stocks posted negative CMAR in pre-SECP period and positive CMAR in post-SECP period.

We also compute the spread between CMAR following buy and sell recommendations within the pre-SECP and the post-SECP period in Table 4. Prior literature considers this as an ability of analysts to differentiate between well performing and badly performing firms and regard it as a measure of the overall value of analysts' recommendations (Jegadeesh and Kim, 2006). Our result shows that analysts' ability to differentiate between well performing and badly performing firms was better in the pre-SECP period, where analysts' buy recommended stocks outperformed their sell recommended stocks by as much as 9.9 basis points for the lead of 112 days. This ability is increasing over time indicating the persistence of analysts' information. While, in the post-SECP period, analysts' buy recommended stocks outperformed their sell

recommended stocks only for the lead of 28 and 112 days and by as much as 4.1 basis points. It shows that analysts' ability to differentiate between well performing and badly performing firms was not as persistent in the post-SECP period as it was in the pre-SECP period. Hence the performance of analysts was better in the pre-SECP period.

[Insert Table 4 here]

4.2. Regression analysis of the performance of cumulative market-adjusted returns following analysts' recommendations

The first step in measuring relative performance of analysts across the pre-SECP and the post-SECP period is to determine whether their recommendations produce systematically different returns in both time periods. In the previous section, we showed that analysts' buy recommendations in the post-SECP period and their sell recommendations in the pre-SECP period contained more information than their corresponding counterpart recommendations (i.e. buy recommendations in the pre-SECP period and sell recommendations in the post-SECP period, respectively). However, in order to compare the performance of analysts' recommendations across the two time periods, we estimate regression on cumulative market-adjusted returns following analysts' recommendation, $CMAR$, with four dummy variables representing analysts' buy and sell recommendations during the pre-SECP and the post-SECP periods. If analysts' buy recommendations in the pre-SECP period are more informative, the regression coefficient representing the pre-SECP buy recommendations should be significantly more than the regression coefficient representing the post-SECP buy recommendations. While, the reverse should hold for regression coefficient representing sell recommendations. More specifically, our equation will regress T-day cumulative market-adjusted returns, $CMAR_{S,T,t}$, on the interaction between the analysts' dummies and the recommendation level dummies as follows⁶:

⁶ We do understand that basic assumption for regressions similar to equation (2) require right hand side variable to be independent.

$$\begin{aligned}
CMAR_{S,T,t} = & \alpha + \beta_{PreSECP}^{Buy}(PreSECP_{S,t} \times Buy_{S,t}) + \beta_{PreSECP}^{Sell}(PreSECP_{S,t} \times Sell_{S,t}) \\
& + \beta_{PostSECP}^{Buy}(PostSECP_{S,t} \times Buy_{S,t}) + \beta_{PostSECP}^{Sell}(PostSECP_{S,t} \times Sell_{S,t}) \\
& + \varepsilon_{S,T,t}
\end{aligned} \tag{2}$$

Where $Buy_{S,t}$ ($Sell_{S,t}$) is the dummy variable that is equal to 1 if the recommendation is a buy (sell) recommendation and 0 otherwise, and $PreSECP_{S,t}$ ($PostSECP_{S,t}$) is the dummy variable that is equal to 1 if the recommendation is issued during the pre-SECP (post-SECP) period and 0 otherwise.

Table 5, Panel A, documents regression coefficients for equation (2). It is important to note here that regression coefficient representing analysts' sell recommendations in the post-SECP period is positive for all lead days, indicating inferior performance of analysts' sell recommendations in the post-SECP period.

Table 5, Panel B, documents the spread between analysts' buy and sell recommendations within each period, which is regarded as a measure of analysts' ability to differentiate well performing from badly performing firms. Our results show that analysts' ability to differentiate between well performing and badly performing firms decreased substantially in the post-SECP period. In the pre-SECP period, analysts' buy recommendations outperformed their sell recommendations by as much as 9.8 basis points over 112 day post recommendation period. However, our results show that analysts' performance deteriorated in the post-SECP period. We show that analysts' buy recommendations outperformed their sell recommendations only for the lead of 112 days during the post-SECP period. For the remaining lead days, we report no significant superior performance of analysts' buy recommendations over their sell recommendations. We also show in Table 5, Panel C, that analysts' ability to differentiate between well performing and badly performing firms was superior in the pre-SECP period for all lead days. The result shows that the difference in spread between analysts' buy and sell recommendations across periods is increasing over time, suggesting that information possessed by analysts in the pre-SECP period was more persistent than their information in the post-SECP period.

Table 5, Panel D, shows that the performance of analysts' sell recommendations deteriorated significantly during the post-SECP period. Our results show that analysts'

sell recommendations in the pre-SECP period outperformed their sell recommendations in the post-SECP period by as much as 8.6 basis points for the lead of 112 days and this remained persistent for almost all lead days. However, buy recommendations produced better returns in post-SECP period that reflects superior quality of buy recommendations in the post-SECP period, when they outperformed pre-SECP buy recommendations by as much as 3.0 basis points over the lead of 112 days.

[Insert Table 5 here]

5. Robustness of results

In this section, we investigate whether our results are robust to different explanatory variables and time periods. First, we re-estimate equation (2) in the presence of numerous control variables such as size, analyst following, and liquidity. Second, in order to overcome the concerns that initial period after the formation of SECP, when the reforms and the authority of SECP was not well established, is driving the relatively poor performance of analysts' in the post-SECP period, we re-estimate equation (2) by dividing the post-SECP period into the pre-governance code and the post-governance code periods. We will report the results for these robustness checks in the following subsections.

5.1. Effect of firm characteristics on the performance of analysts' recommendations during/across the pre-SECP and the post-SECP periods

The results presented thus far suggest analysts' performance deteriorated significantly after the formation of SECP. However, there may be concerns about the importance of firm-specific characteristics on the subsequent returns. For example, it is possible that analysts covered relatively smaller stocks in the post-SECP period and smaller stocks underperformed larger stocks that analysts used to cover in the pre-SECP period. This may, therefore, result in the inferior performance of the post-SECP recommendations in comparison to the pre-SECP recommendations. Recognizing the

importance of firm-specific characteristics, we add number of control variables that capture the amount of public information, liquidity, and investors' interest in a firm. For example, the number of analyst following for a stock ($NAF_{S,t}$) was added to capture the amount of public information, while market value of a stock ($LMV_{S,t}$) and mean recommendation of stock ($MREC_{S,t}$) was added to capture investors' interest in a particular stock. We also controlled for stocks' liquidity and market's liquidity in both time periods by adding price of a stock on the day of recommendation, price ($PRICE_{S,t}$) and level of market index on the day of recommendation ($MINDEX_t$). We added industrial dummies ($IND_{S,t}$) and year dummies (YRD) to captures the effects of industries and specific years on the performance of recommendations in both time periods. More specifically, our regression equation takes the following form:

$$\begin{aligned}
CMAR_{S,T,t} = & \alpha + \beta_{PreSECP}^{Buy}(PreSECP_{S,t} \times Buy_{S,t}) + \beta_{PreSECP}^{Sell}(PreSECP_{S,t} \times Sell_{S,t}) \\
& + \beta_{PostSECP}^{Buy}(PostSECP_{S,t} \times Buy_{S,t}) + \beta_{PostSECP}^{Sell}(PostSECP_{S,t} \times Sell_{S,t}) \\
& + \beta_i(LMV_{S,t}) + \beta_i(PRICE_{S,t}) + \beta_i(MINDEX_t) + \beta_i(NAF_{S,t}) \\
& + \beta_i(MREC_{S,t}) + \beta_i(IND_{S,t}) + \beta_i(YRD) + \varepsilon_{S,T,t}
\end{aligned} \tag{3}$$

Table 6 documents the results based on equation (3). Panel A reports regression coefficients, Panel B documents the spread between analysts' buy and sell recommendations within each period, Panel C reports the difference in spread between buy and sell recommendations across periods, and Panel D shows the difference between analysts buy as well as sell recommendations across pre-SECP and post-SECP periods.

Addition of control variables further strengthens our results in the favor of superior analysts' performance during the pre-SECP period. For example, Panel B shows that there is no significant difference between analysts' buy and sell recommendations in the post-SECP period for all lead days. This result supports our previous finding of superior analysts' performance in the pre-SECP period more convincingly. Similarly, Panel D documents that analysts' post-SECP buy recommendations outperform their pre-SECP buy recommendations only for the lead of 28 days. It shows a substantial decline

from the results that were reported in Table 5, Panel D, where we have shown an increasing trend in the superior performance of post-SECP buy recommendations over pre-SECP buy recommendations and significant superior performance for the lead of 28, 56, and 112 days.

[Insert Table 6 here]

5.2. Effect of governance code on the performance of analysts' recommendations during/across the pre-SECP and the post-SECP periods

There can be concerns that superiority of analysts' recommendations in the pre-SECP period may be due to ineffectiveness of SECP in implementing its authority and reforms in the initial days of its formation. In order to overcome these concerns, we divide post-SECP period into two periods with March 2, 2002 as a cut-off point.⁷ March 2, 2002 is the date when SECP issued code of corporate governance in order to improve the transparency and efficiency of corporate sector. Rais and Saeed (2005) show that code of corporate governance improved the overall corporate structure and business environment by making firms more responsible, and by ensuring transparency and accountability in the corporate and financial reporting framework. It will, therefore, cause a significant improvement in analysts' performance during the post-governance code period. This expectation is consistent with the prior literature that predicts significant improvement in analysts' performance after the implementation of governance reforms (Hope, 2003; Ashbaugh and Pincus, 2001; Chang et. al., 2000). Therefore, our regression equation takes the following form:

⁷ The first part consists of time period between January 1, 1999 and March 1, 2002. This period is referred as pre-governance code period. The second part comprises of time period between March 2, 2002 and December 31, 2005 and is referred as post-governance code period..

$$\begin{aligned}
CMAR_{S,T,t} = & \alpha + \beta_{PreSECP}^{Buy} (PreSECP_{S,t} \times Buy_{S,t}) + \beta_{PreSECP}^{Sell} (PreSECP_{S,t} \times Sell_{S,t}) \\
& + \beta_{PreGov}^{Buy} (PreGov_{S,t} \times Buy_{S,t}) + \beta_{PreGov}^{Sell} (PreGov_{S,t} \times Sell_{S,t}) \\
& + \beta_{PostGov}^{Buy} (PostGov_{S,t} \times Buy_{S,t}) + \beta_{PostGov}^{Sell} (PostGov_{S,t} \times Sell_{S,t}) \\
& + \beta_i(LMV_{S,t}) + \beta_i(PRICE_{S,t}) + \beta_i(MINDEX_t) + \beta_i(NAF_{S,t}) \\
& + \beta_i(MREC_{S,t}) + \beta_i(IND_{S,t}) + \beta_i(YRD) + \varepsilon_{S,T,t}
\end{aligned} \tag{4}$$

Where $PreGov_{S,t}$ is the dummy variable that is equal to 1 if the recommendation is issued during the pre-governance code period and 0 otherwise; and $PostGov_{S,t}$ is the dummy variable that is equal to 1 if the recommendation is issued during the post-governance code period and 0 otherwise.

Table 7 documents the results based on equation (4). Panel A reports regression coefficients, Panel B documents the spread between analysts' buy and sell recommendations within each period, Panel C reports the difference in spread between buy and sell recommendations across periods, and Panel D1 and Panel D2 reports the difference between analysts buy and sell recommendations respectively during the pre-SECP, pre-governance code, and post-governance code periods.

The results of equation (4) confirm our previous finding that analysts' performance deteriorated in the post-SECP period. Our results show that issuance of corporate governance code further deteriorated the performance of analysts as their recommendation became more inefficient in post-governance code period. For example, Panel B shows that analysts' ability to differentiate between well performing and badly performing firms was the lowest in the post-governance code period. Similarly, Panel D2 shows that difference between post-governance code period and pre-SECP period sell recommendations was significantly more than the difference between pre-governance code period and pre-SECP period sell recommendations.

[Insert Table 7 here]

6. Discussion of results

This paper tests whether analysts' performance improve with the improvement in firm-level corporate governance mechanisms in Pakistan. Contrary to our expectations, our results report that the improvement in firm-level governance mechanisms adversely affected the analysts' performance. This result is surprising. However, a closer look at our sample shows that the time period after the formation of SECP is marked by extreme influence of market intermediaries on stock market performance.

We argue that analysts' performance deteriorate significantly as the unscrupulous behavior of market intermediaries increase. Deterioration in analysts' performance is most evident in the later part of post-SECP period, i.e. post governance code period, when the deceitful behavior of market intermediaries was at its peak. Our argument is in line with the stand taken by growing number of independent analysts/critics who accuse market intermediaries of accumulating market power and bending the laws and regulations to suit their own needs and interests (Khwaja and Mian, 2005). These manipulative activities of brokers diminish the positive effects of any governance reforms that regulatory authorities introduce in newly emerging markets.

One of the reasons for such unscrupulous behavior of brokers is that Pakistan has an extremely shallow securities market. Unlike developed countries where stock ownership is widely held, majority shareholdings in Pakistan are controlled by wealthy individuals and families that do not frequently trade their shares since they want to retain tight control over the firms. It results into the reduction of free float, enabling the bigger brokers with considerable liquidity to bend the laws of demand and supply in their favor and move the prices up or down by injecting or withdrawing cash from the market. They may use analysts, who are employed by them, to facilitate their deceitful behavior by inducing them to issue such recommendations that serve their own interests. Naive investors, who have limited information, rely on their instincts and the recommendations of these brokerage houses while making investment decisions. They, therefore, end up trading in the same direction in which brokers want them to trade. For example, brokerage house may start accumulating stocks at a lower price, which gradually pushes stock price up till it reaches a level where brokerage houses ask their analysts to issue buy recommendations. Naive investors, anticipating stock prices to go up further, keep on buying at analysts' buy recommendations. At this point, brokerage houses may start

disposing off their accumulated stocks at that high price. Our results show that one of the reasons why analysts' buy recommendations fail to register significant CMAR may be the fact that brokerage houses are exiting the stocks at that high price. Similar arguments should hold for sell recommendations.

Such an undue advantage by few market intermediaries has implications for regulation because it implies that instead of focusing only on firm-level governance mechanisms, regulation must be put in place for market intermediaries as well. As a first step, for example in Pakistan, SECP should demutualize stock exchanges. The stock exchanges in Pakistan are owned and administered by the members/brokers that they are supposed to regulate. The large rents extracted by brokers may not allow them to effectively regulate the stock exchanges. Therefore, such a costly self-regulation is unlikely in emerging economies (Glaeser et al., 2001).

7. Conclusion

We measured the performance of analysts' stock recommendations in both before and after the formation of Securities and Exchange Commission (SECP) of Pakistan. The commission was introduced to regulate and govern the corporate sector including stock exchanges. One of the key objectives of SECP was the effective monitoring and investor protection through transparent disclosure practices. We assessed the effect of improvements in the firm-level corporate governance mechanisms on the performance of analysts. Surprising enough, analysts' performance in the pre-SECP period was much better than their performance in the post-SECP period. Our results also show that analysts' performance deteriorated gradually and was the worst in the post-governance code period.

This results documented in this paper are in contrast to expectations of an improved performance of analysts during the post-SECP period due to better governance and disclosure mechanisms. However, a careful look at our sample period reveals that the post-SECP period was marked by manipulation of prices by few influential brokers. Since, most of the brokers in Pakistan are active investors as well, so it may be possible that they trade on their recommendations much before they make their recommendations

public. It will decrease the information content of their recommendations significantly. This in turn has implications for regulation because it implies that instead of focusing only firm-level regulations alone, regulation must also correct for the unscrupulous behavior, such as price manipulation, of influential market intermediaries.

We propose that regulatory authorities, such as SECP, should set up independent department that analyze the brokerage houses' recommendations on a continuous basis and publish the rankings of brokerage houses for public. It will not only induce brokerage houses to publish timely and more informative recommendations but also allow naive investors to figure out which brokerage house to look at while making their investments. We believe that it will help to curtail some of the unscrupulous behavior of brokerage houses. Another possible implication is to introduce incentives and mechanism to increase the investor base. It will help in cutting down the free float, most of which is held by influential brokers, which they usually use to manipulate the demand and supply forces within the market.

Reference

Abarbanell, J. S. and Bushee, B. J., (1998). Abnormal Returns to a Fundamental Analysis Strategy. *The Accounting Review*, 73.

Ashbaugh, H. and Pincus, M., (2001). Domestic Accounting Standards, International Accounting Standards, and the Predictability of Earnings. *Journal of Accounting Research*, 39.

Chang, J. J., Khanna, T., and Palepu, K., (2000). Analyst Activity around the World. Working Paper, Harvard University.

Chiang, H-T., (2005). Analyst's Financial Forecast Accuracy and Information Transparency. *The Journal of American Academy of Business*, 7.

Chen, C. J. P. and Jaggi, B., (2000). Association between Independent Non-Executive Directors, Family Control and Financial Disclosures in Hong Kong. *Journal of Accounting and Public Policy*, 19.

Eng, L. L. and Mak, Y. T., (2003). Corporate Governance and Voluntary Disclosure. *Journal of Accounting and Public Policy*, 22.

Hope, O-K., (2003). Disclosure Practices, Enforcement of Accounting Standards, and Analysts' Forecast Accuracy: An international Study. *Journal of Accounting Research*, 41.

Jegadeesh, N. and Kim, W., (2006). Value of Analyst Recommendations: International Evidence. *Journal of Financial Markets*, 9, 274-309.

Kyle, A. S., (1985). Continuous Auctions and Insider Trading. *Econometrica*, 53, 1315-1336.

La Porta, R., Florencio, L-d-S, and Shleifer, A., (1998). Law and Finance. *Journal of Political Economy*, 106.

Lai, S. and Teo, M., (2006). Home Biased Analysts. Working Paper, Singapore Management University.

Lang, M. and Lundholm, R. J., (1996). Corporate Disclosure Policy and Analysts Behavior. *The Accounting Review*, 71.

Lobo, G. J., Kwon, S. S., and Ndubizu, G. A., (1998). The Impact of SFAS No. 14 Segment Information on Price Variability and Earnings Forecast Accuracy. *Journal of Business Finance & Accounting*, 25.

Lowenstein, L., (1996). Financial Transparency and Corporate Governance: You Manage What You Measure. Columbia Law Review.

Rais, R. B. and Saeed, A., (2005). Regulatory Impact Assessment of SECP's Corporate Governance Code in Pakistan. CMER Working Paper, Lahore University of Management Sciences.

Stickel, S. E., (1995). The Anatomy of the Performance of Buy and Sell Recommendations. Financial Analysts Journal, 51, 25-39.

The News, 2005

Womack. K. L., (1996). Do Brokerage Analysts' Recommendations have Investment Value? Journal of Finance, 51, 137-167.

Table 1
Basic descriptive statistics

This table presents the descriptive statistics for the sample. The sample includes all firms in Pakistan that have at least one recommendation issued by analysts. The columns present number of recommendations, number of firms covered, number of brokerage houses covering firms, average number of recommendations per firm, and average market capitalization for buy, hold, and sell recommendations on the day of recommendation. The sample period is from November 1, 1993 to December 31, 2005. Our sample period covers the pre-SECP and the post-SECP periods.

Period	Number of Recommendations	Number of Firms	Number of Brokerage Houses	Market Value on Recommendation Day (Million Rupees)		
				Buy	Hold	Sell
Pre-SECP	1074	121	11	9725.02	5827.99	13850.87
Post-SECP	777	77	14	18895.57	10631.21	14483.15

Table 2
Type of recommendations issued by analysts

This table presents basic descriptive statistics for the type of recommendations issued in Pakistan during the pre-SECP and the post-SECP periods. The pre-SECP period consist of time period between November 1, 1993 and December 31, 1998, while the post-SECP period comprise of time period between January 1, 1999 and December 31, 2005. All strong buy and buy recommendations are characterized as buy recommendations, while all underperform and sell recommendations are labeled as sell recommendations.

Panel A: Number of each type of recommendations

Period	Buy	Hold	Sell
Pre-SECP	487	324	263
Post-SECP	383	153	238

Panel B: Percentage of each type of recommendations

Period	Buy	Hold	Sell
Pre-SECP	45.4%	30.2%	24.4%
Post-SECP	49.5%	19.8%	30.7%

Table 3
Industries followed by analysts

This table presents the descriptive statistics for the type of firms covered in our sample by analysts during the pre-SECP and the post-SECP periods. The sample includes all firms that have at least one recommendation issued by analysts. The pre-SECP period consist of time period between November 1, 1993 and December 31, 1998, while the post-SECP period comprise of time period between January 1, 1999 and December 31, 2005.

Industries	Pre-SECP		Post-SECP	
	Number	Percentage	Number	Percentage
Oil and Gas	38	3.5%	91	11.8%
Basic Materials	124	11.5%	163	21.1%
Industrials	168	15.6%	98	12.7%
Consumer Goods	147	13.7%	115	14.6%
Health Care	1	0.1%	0	0.0%
Consumer Services	11	1.0%	11	1.4%
Telecommunications	17	1.6%	29	3.7%
Utilities	105	9.8%	99	12.8%
Financials	209	19.5%	96	12.4 %
Technology	0	0.0%	4	0.5%

Table 4**Cumulative market-adjusted returns following analyst recommendation**

This table presents the cumulative market-adjusted returns (CMAR) following analysts' recommendation during the pre-SECP and the post-SECP periods. CMAR are calculated using Equation (1). The pre-SECP period consist of time period between November 1, 1993 and December 31, 1998, while the post-SECP period comprise of time period between January 1, 1999 and December 31, 2005. In our analysis, we make no distinction between "Buy" and "Strong Buy" and characterize both of them as "Buy". Similarly, we also make no distinction between "Sell" and "Underperform" and characterize both of them as "Sell". CMAR significant at 1% is denoted by ***, 5% by ** and 10% by *.

Panel A: Pre-SECP period

Lead Days	Buy Recommendation	Sell Recommendations	Buy – Sell
1 Day Lead	-0.000	-0.004**	0.004*
7 Day Lead	-0.000	-0.007*	0.007*
14 Day Lead	-0.000	-0.012**	0.012*
28 Day Lead	-0.006	-0.044***	0.038***
56 Day Lead	-0.016**	-0.046***	0.030***
112 Day Lead	-0.015*	-0.114***	0.099***

Panel B: Post_SECP period

Lead Days	Buy Recommendation	Sell Recommendations	Buy – Sell
1 Day Lead	0.002*	0.000	0.002
7 Day Lead	0.002	0.000	0.002
14 Day Lead	0.003	0.006	-0.003
28 Day Lead	0.009**	-0.005	0.014*
56 Day Lead	0.005	-0.007	0.012
112 Day Lead	0.013	-0.028**	0.041**

Table 5
Regression results without control variables

This table presents results for of Equation (2). The pre-SECP period consists of time period between November 1, 1993 and December 31, 1998, while the post-SECP period comprise of time period between January 1, 1999 and December 31, 2005. Panel A documents regression coefficients on analysts buy and sell recommendations. Panel B reports the results for following hypotheses:

$$H_0 : \beta_{PreSECP}^{Buy} = \beta_{PreSECP}^{Sell} \qquad H_0 : \beta_{PostSECP}^{Buy} = \beta_{PostSECP}^{Sell}$$

Panel C shows the results for following hypotheses:

$$H_0 : (\beta_{PreSECP}^{Buy} - \beta_{PreSECP}^{Sell}) = (\beta_{PostSECP}^{Buy} - \beta_{PostSECP}^{Sell})$$

Panel D reports the results for following hypotheses:

$$H_0 : \beta_{PreSECP}^{Buy} = \beta_{PostSECP}^{Buy} \qquad H_0 : \beta_{PreSECP}^{Sell} = \beta_{PostSECP}^{Sell}$$

All hypothesis are tested using the Wald's test. 1% significance is denoted by ***, 5% by ** and 10% by *.

Panel A: Regression coefficients

Recommendations	1Day Lead	7Day Lead	14Day Lead	28Day Lead	56Day Lead	112Day Lead
Pre-SECP Buy	0.003	0.006	0.008	0.015*	0.020*	0.034**
Pre-SECP Sell	-0.000	-0.000	-0.003	-0.022**	-0.009	-0.064***
Post-SECP Buy	0.005***	0.009*	0.011**	0.030***	0.042***	0.064***
Post-SECP Sell	0.004*	0.007	0.014**	0.016	0.030**	0.022
R-square	0.007	0.004	0.005	0.019	0.013	0.033
Observations	1151	1330	1330	1317	1302	1272

Panel B: Spread between buy and sell recommendations within periods

Lead Days	(Buy – Sell) _{Pre-SECP}		(Buy – Sell) _{Post-SECP}	
	Value	F-value	Value	F-value
1 Day Lead	0.003	1.93	0.001	0.41
7 Day Lead	0.006	1.77	0.002	0.16
14 Day Lead	0.011	2.04	-0.003	0.16
28 Day Lead	0.037***	10.16	0.014	1.88
56 Day Lead	0.029**	4.01	0.012	0.70
112 Day Lead	0.098***	25.98	0.042**	3.64

Panel C: Difference of spread between buy and sell recommendations across periods

Lead Days	(Buy – Sell) _{Pre-SECP} – (Buy – Sell) _{Post-SECP}	
	Value	F-value
1 Day Lead	0.002	0.28
7 Day Lead	0.004	0.43
14 Day Lead	0.014	1.80
28 Day Lead	0.023	2.24
56 Day Lead	0.017	0.72
112 Day Lead	0.056**	3.83

Panel D: Difference between buy and sell recommendations across periods

Lead Days	(Buy)_{Pre-SECP} – (Buy)_{Post-SECP}		(Sell)_{Pre-SECP} – (Sell)_{Post-SECP}	
	Value	F-value	Value	F-value
1 Day Lead	-0.002	1.59	-0.004*	2.92
7 Day Lead	-0.003	0.33	-0.007	1.65
14 Day Lead	-0.003	0.29	-0.017**	4.15
28 Day Lead	-0.015*	2.93	-0.038***	8.90
56 Day Lead	-0.022**	3.67	-0.039**	4.95
112 Day Lead	-0.030*	2.57	-0.086***	14.43

Table 6**Regression results with control variables**

This table presents results for of Equation (3). The pre-SECP period consists of time period between November 1, 1993 and December 31, 1998, the post-SECP period comprise of time period between January 1, 1999 and December 31, 2005. Panel A documents regression coefficients on analysts buy and sell recommendations. Panel B reports the results for following hypotheses:

$$H_0 : \beta_{PreSECP}^{Buy} = \beta_{PreSECP}^{Sell} \qquad H_0 : \beta_{PostSECP}^{Buy} = \beta_{PostSECP}^{Sell}$$

Panel C shows the results for following hypotheses:

$$H_0 : (\beta_{PreSECP}^{Buy} - \beta_{PreSECP}^{Sell}) = (\beta_{PostSECP}^{Buy} - \beta_{PostSECP}^{Sell})$$

Panel D reports the results for following hypotheses:

$$H_0 : \beta_{PreSECP}^{Buy} = \beta_{PostSECP}^{Buy} \qquad H_0 : \beta_{PreSECP}^{Sell} = \beta_{PostSECP}^{Sell}$$

All hypothesis are tested using the Wald's test. 1% significance is denoted by ***, 5% by ** and 10% by *.

Panel A: Regression coefficients

Recommendations	1Day Lead	7Day Lead	14Day Lead	28Day Lead	56Day Lead	112Day Lead
Pre-SECP Buy	0.002	0.005	0.005	0.008	0.025**	0.034*
Pre-SECP Sell	-0.000	-0.000	-0.002	-0.016	0.000	-0.034
Post-SECP Buy	0.005	0.012	0.016*	0.036***	0.033**	0.027
Post-SECP Sell	0.004	0.010	0.022**	0.031**	0.028	0.009
R-square	0.021	0.026	0.029	0.053	0.067	0.086
Observations	1147	1324	1324	1311	1296	1266

Panel B: Spread between buy and sell recommendations within periods

Lead Days	(Buy – Sell) _{Pre-SECP}		(Buy – Sell) _{Post-SECP}	
	Value	F-value	Value	F-value
1 Day Lead	0.002	0.85	0.001	0.09
7 Day Lead	0.005	0.86	0.002	0.13
14 Day Lead	0.007	0.68	-0.006	0.49
28 Day Lead	0.024*	3.50	0.005	0.18
56 Day Lead	0.025*	2.56	0.005	0.11
112 Day Lead	0.068***	9.09	0.018	0.53

Panel C: Difference of spread between buy and sell recommendations across periods

Lead Days	(Buy – Sell) _{Pre-SECP} – (Buy – Sell) _{Post-SECP}	
	Value	F-value
1 Day Lead	0.001	0.26
7 Day Lead	0.003	0.19
14 Day Lead	0.013	1.46
28 Day Lead	0.019	1.44
56 Day Lead	0.020	0.81
112 Day Lead	0.050*	2.63

Panel D: Difference between buy and sell recommendations across periods

Lead Days	(Buy)_{Pre-SECP} – (Buy)_{Post-SECP}		(Sell)_{Pre-SECP} – (Sell)_{Post-SECP}	
	Value	F-value	Value	F-value
1 Day Lead	-0.003	0.30	-0.004	0.83
7 Day Lead	-0.007	0.62	-0.010	1.15
14 Day Lead	-0.011	1.08	-0.024**	3.68
28 Day Lead	-0.028*	2.97	-0.047***	5.88
56 Day Lead	-0.008	0.16	-0.028	1.18
112 Day Lead	0.007	0.04	-0.043	1.56

Table 7**Regression results without control variables**

This table presents results for of Equation (4). The pre-SECP period consists of time period between November 1, 1993 and December 31, 1998, the pre-governance code period comprise of time period between January 1, 1999 and March 2, 2002, and the post-governance code period consist of time period between March 3, 2002 and December 31, 2005. Panel A documents regression coefficients on analysts buy and sell recommendations. Panel B reports the results for following hypotheses:

$$H_0 : \beta_{PreSECP}^{Buy} = \beta_{PreSECP}^{Sell} \quad H_0 : \beta_{PreGov}^{Buy} = \beta_{PreGov}^{Sell} \quad H_0 : \beta_{PostGov}^{Buy} = \beta_{PostGov}^{Sell}$$

Panel C shows the results for following hypotheses:

$$H_0 : (\beta_{PreSECP}^{Buy} - \beta_{PreSECP}^{Sell}) = (\beta_{PreGov}^{Buy} - \beta_{PreGov}^{Sell})$$

$$H_0 : (\beta_{PreSECP}^{Buy} - \beta_{PreSECP}^{Sell}) = (\beta_{PostGov}^{Buy} - \beta_{PostGov}^{Sell})$$

$$H_0 : (\beta_{PreGov}^{Buy} - \beta_{PreGov}^{Sell}) = (\beta_{PostGov}^{Buy} - \beta_{PostGov}^{Sell})$$

Panel D1 and Panel D2 report the results for following hypotheses:

$$H_0 : \beta_{PreSECP}^{Buy} = \beta_{PreGov}^{Buy} \quad H_0 : \beta_{PreSECP}^{Buy} = \beta_{PostGov}^{Buy} \quad H_0 : \beta_{PreGov}^{Buy} = \beta_{PostGov}^{Buy}$$

$$H_0 : \beta_{PreSECP}^{Sell} = \beta_{PreGov}^{Sell} \quad H_0 : \beta_{PreSECP}^{Sell} = \beta_{PostGov}^{Sell} \quad H_0 : \beta_{PreGov}^{Sell} = \beta_{PostGov}^{Sell}$$

All hypothesis are tested using the Wald's test. 1% significance is denoted by ***, 5% by ** and 10% by *.

Panel A: Regression coefficients

Recommendations	1Day Lead	7Day Lead	14Day Lead	28Day Lead	56Day Lead	112Day Lead
Pre-SECP Buy	0.002	0.005	0.005	0.007	0.025**	0.034**
Pre-SECP Sell	-0.000	-0.000	-0.002	-0.016	0.000	-0.035*
Pre-Gov Buy	0.005	0.015	0.014	0.043***	0.038**	0.001
Pre-Gov Sell	0.009*	0.011	0.020*	0.026	-0.001	-0.003
Post-Gov Buy	-0.004	0.002	0.024*	0.019	0.066*	0.142**
Post-Gov Sell	-0.008	0.001	0.030**	0.022	0.082**	0.115
R-square	0.024	0.026	0.029	0.053	0.070	0.088
Observations	1147	1324	1324	1311	1296	1266

Panel B: Spread between buy and sell recommendations within periods

Lead Days	(Buy – Sell) _{Pre-SECP}		(Buy – Sell) _{Pre-Gov}		(Buy – Sell) _{Post-Gov}	
	Value	F-value	Value	F-value	Value	F-value
1 Day Lead	0.002	0.81	-0.004	0.52	0.004	1.29
7 Day Lead	0.005	0.82	0.004	0.09	0.001	0.06
14 Day Lead	0.007	0.70	-0.006	0.19	-0.006	0.35
28 Day Lead	0.023*	3.41	0.017	0.89	-0.003	0.03
56 Day Lead	0.025*	2.61	0.039*	2.60	-0.016	0.55
112 Day Lead	0.069***	9.43	0.004	0.04	0.027	0.55

Panel C: Difference of spread between buy and sell recommendations across periods

Lead Days	$(Buy - Sell)_{Pre-SECP} - (Buy - Sell)_{Pre-Gov}$		$(Buy - Sell)_{Pre-SECP} - (Buy - Sell)_{Post-Gov}$		$(Buy - Sell)_{Pre-Gov} - (Buy - Sell)_{Post-Gov}$	
	Value	F-value	Value	F-value	Value	F-value
1 Day Lead	0.006	1.38	-0.002	0.09	-0.008	1.81
7 Day Lead	0.001	0.04	0.004	0.22	0.003	0.02
14 Day Lead	0.013	0.82	0.013	1.20	0.000	0.00
28 Day Lead	0.006	0.12	0.026	2.05	0.020	0.76
56 Day Lead	-0.014	0.26	0.041*	2.65	0.055*	3.17
112 Day Lead	0.065**	4.26	0.042	1.20	-0.023	0.27

Panel D1: Difference between buy recommendations across periods

Lead Days	$(Buy)_{Pre-SECP} - (Buy)_{Pre-Gov}$		$(Buy)_{Pre-SECP} - (Buy)_{Post-Gov}$		$(Buy)_{Pre-Gov} - (Buy)_{Post-Gov}$	
	Value	F-value	Value	F-value	Value	F-value
1 Day Lead	-0.003	0.03	0.006	1.80	0.009*	2.59
7 Day Lead	-0.01	0.74	0.003	0.05	0.013	0.82
14 Day Lead	-0.009	0.62	-0.019	1.54	-0.01	0.33
28 Day Lead	-0.036**	3.97	-0.012	0.15	0.024	0.50
56 Day Lead	-0.013	0.33	-0.041	1.12	-0.028	0.45
112 Day Lead	0.033	1.19	-0.108	2.02	-0.141*	3.32

Panel D2: Difference between sell recommendations across periods

Lead Days	$(Sell)_{Pre-SECP} - (Sell)_{Pre-Gov}$		$(Sell)_{Pre-SECP} - (Sell)_{Post-Gov}$		$(Sell)_{Pre-Gov} - (Sell)_{Post-Gov}$	
	Value	F-value	Value	F-value	Value	F-value
1 Day Lead	-0.007**	4.85	-0.002	0.79	0.005	1.88
7 Day Lead	-0.005	0.48	-0.008	1.90	-0.003	0.12
14 Day Lead	-0.009	0.66	-0.022***	5.53	-0.013	1.31
28 Day Lead	-0.027*	2.65	-0.044***	9.34	-0.017	0.33
56 Day Lead	-0.009	0.18	-0.055***	7.63	-0.046*	3.24
112 Day Lead	-0.083***	10.74	-0.087***	9.82	-0.004	0.02