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FINANCIAL CRISIS AND PERFORMANCE OF ANALYSTS' RECOMMENDATIONS

EVIDENCE FROM ASIAN EMERGING MARKETS

Helsinki 2008

Financial Crisis and Performance of Analysts' Recommendations: Evidence from Asian Emerging Markets

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1. Introduction

Information is the key to efficient functioning of the stock markets. Securities get priced correctly when all relevant information about firms enters the market. Financial research has therefore paid considerable attention on understanding the price revelation processes and the mechanisms through which fundamental information get incorporated into the stock prices.

Financial analysts play an important role in this process by bringing out new information about firms to investors. Under normal circumstances, investors view analysts' research reports, forecasts, and recommendations as relatively accurate sources of information and use them in their investment decisions.

Analysts' role in bringing out new information becomes even more crucial for investors during periods of high uncertainty, i.e. crisis periods. In these periods, the ability to pick up and react on early clues for impeding changes can make a huge difference in terms of investment returns. Prior literature has documented that conventional sources of information loose their relevance during turbulent economic conditions. For example, Friday and Gordon (2002) document the decline in value relevance of earnings during the Mexican crisis of 1995, while Graham et al. (2000) document similar results for Thai book values during the Asian crisis of 1997-98. Deterioration in the informativeness of information disclosed by firms during the crisis period implies that either the information being disclosed is not correct or the way information was interpreted prior to the crisis has become irrelevant. In either of the two cases, importance of analysts increases substantially. In these circumstances, geographic proximity of analysts with decision makers in the analyzed firm becomes central to analysts' ability to give proper advice to investors.[1] The fact that Asian emerging markets have attracted considerable attention from foreign analysts, allows

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[1] There may be arguments that give geographically distant foreign analysts advantage over local analysts. These arguments would suggest that external factors such as international exposure of stock markets (Masson, 1998), international exposure of firms (Forbes, 2004), and the IMF led bail-out packages become more important determinants of firm performance during the crisis period.

us to separate analysts into foreign and local to examine differences in the role that both groups of analysts played in information dissemination during the crisis period. By comparing the two groups, we can analyze to what extent geographic location of analysts actually matters in the process of information collection and dissemination. In this thesis, we will investigate how foreign and local analysts contributed to information dissemination in Asian emerging markets – Thailand, South Korea, Malaysia, and Indonesia – during the financial crisis of 1997-98. By comparing foreign and local analysts we can also analyze to what extent geographic proximity actually matters during turbulent periods. Furthermore, turbulent times will expose shortcomings in how information concerning a firm has been revealed to investors. In order to attract capital in the future to these markets, reforms that level the playing field for foreign investors against the local players will become necessary.

2. Role of analysts in stock markets

The mechanisms through which fundamental information get incorporated into the stock prices are highly relevant for investors who lack the time and resources to gather and interpret relevant new information. These mechanisms will become more complex along with the environments in which firms operate. Modern firms function in a global environment and are affected by factors that range from firm-specific factors such as governance and disclosure mechanisms[2] to country-specific factors such as political stability and rule of law to international factors that may have an impact on the demand for the firm's products in different parts of the world. For most investors, it would be too costly to gather and interpret how these diverse factors can affect firm's performance.

Financial analysts are specialized in gathering and interpreting information. In doing so, they aid investors by relieving them of high, primarily fixed, costs that are required to learn enough concerning the operations of an individual firm and be able to make independent assessments of the value impact of diverse pieces of information

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[2] Vested interests of top management, controlling owners, and big creditors make it difficult for firms to truthfully disclose firm-specific information. Investors, therefore, cannot take disclosed information at its face value.

concerning the firm.[3] Therefore specialization, so that one person does the work for many investors, is welfare increasing.

The main task of financial analysts can be categorized as following (Michaely and Womack, 1999):

- Collecting new information on the industry or individual stock from customers, suppliers, and firm managers
- Incorporating this new information into their analysis to form earnings estimates and recommendations
- Providing recommendations and financial models to their customers through oral or written reports

Recent research has included these activities among the main contributors to efficient formation of security prices (Beaver, 2002). Fernandez (2001) documented that analysts' information production is the "life-blood" for the market as well as the individual investor.

By issuing forecasts and recommendations analysts reduce some of the information asymmetry that make outside shareholders of listed firms disadvantaged relative to corporate insiders. Amir et al. (1999), for example, show that analysts' forecasts mitigate some of the deficiencies in the information contents of financial statements. They show that the contribution of analysts in reducing information asymmetries is greater in industries with higher degree of information uncertainty By improving the information of relatively opaque firms, analysts' work benefits those active investors in particular, who lack resources and expertise to make informed investment decision on their own. To the extent that naive investors accept information provided by firms at the face value, the behavior of naive investors may induce firms to provide biased information to extract maximum profits from subsequent economic interactions. Analysts reduce such behavior by bringing out valuable information to stock market participants. Since small investors tend to follow analysts' recommendations literally (Malmendier and Shanthikumar, 2005), unbiased revelation of information by analysts make the stock market more attractive for private investors.

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[3] Prior literature suggests that stock markets are far from perfect (Banz, 1981; Jegadeesh and Titman, 1993; Fama and French, 1992). This strand of literature documents that not all information is incorporated in prices at a given point in time. These inefficiencies also confirm the need for agents, such as financial analysts, that can realize these inefficiencies and expend their resources on gathering and processing information.

3. Factors affecting analysts' performance

Factors that can affect analysts in processing and disseminating information can be divided into the following categories:

- Conflicts of Interests
- Reputation and Career Concerns

These factors are not exhaustive. We have deliberately left out a number of other factors (such as need for management access[4], herding[5], and analysts' ownership interests in the covered firm[6]) from this discussion.

3.1. Conflicts of interests

Conflicts of interest arise in organizations consisting of interdependent groups that provide services to distinct parties that may have conflicting goals (Hayward and Boecker, 1998). Financial analysts also face a similar situation as they, on one hand have to provide unbiased research to their investor clients and, on the other hand, generate business for their employers, i.e. the investment bank they work for. These conflicts may induce analysts to compromise their integrity while issuing forecasts and recommendations. Prior literature shows that, as a result of these conflicts of interests, analysts provide recommendations that are overly optimistic and do not reflect their true beliefs about the value of stocks. Dugar and Nathan (1995), while studying analysts' earnings forecasts, document that analysts issue more optimistic earnings forecasts for their own firms' investment banking clients than do non-affiliated analysts.

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[4] Francis and Philbrick (1993) state that analysts are inclined to optimism since they want to curry favor with the managers who supply them with the private information they need to prepare relevant forecasts. This means that all analysts are potentially subject to conflicts of interest because they all have to cultivate management relations.

[5] Analysts closely follow other analysts while issuing forecasts and recommendations. Trueman (1994) suggests that analysts prefer to release earnings forecasts that are close to prior earnings expectations, even if their information justifies more extreme forecasts. One of the reasons why analysts may want to follow their compatriots is that they perceive the cost of being the lone wrong voice as greater than that of being wrong with the herd.

[6] An analyst or the investment bank may own significant positions in the firms an analyst covers. Analysts may also participate in employee stock-purchase pools that invest in firms they cover. Moreover, an analyst's firm may acquire a stake in a start-up by obtaining discounted, pre-IPO shares. These practices may induce an analyst, the firm he or she works for, or both to profit, directly or indirectly, from owning securities in firms the analyst covers.

3.1.1. Conflicts of interests due to analysts' employers

Most analysts are associated with investment banks and brokerage houses. These investment banks and brokerage houses have a given level of fixed costs for running their business. These costs are usually covered by trading commissions and investment banking fees. Boni and Womack (2003) report that trading commissions and investment banking fees in the US amounted to $9.5 billion and $24.5 billion respectively in 2003. Such huge monetary gains may induce investment banks and brokerage houses to use their affiliated analysts to issue such recommendations that may facilitate their business. The major conflicts that arise due to analysts' employers, i.e. investment banks and brokerage houses are briefly discussed below.

3.1.1.1. Investment banking pressures

As a rule, investment banks want their individual investor clients to be successful, but due to big fees involved, conflicts of interest relating to investment banking activities may take precedence over the concerns regarding the well-being of individual investor clients. Optimistic forecasts and recommendations tend to generate more investment banking business from the brokerages clients. Optimistic research helps place new issues, promote current M&A deals, and win new business by sustaining demand for securities.

3.1.1.2. Underwriting concerns

Investment banks have substantial financial and reputation interests in the making underwriting offerings that they arrange successful. Analysts are often an integral part of the investment banking team for initial public offerings, assisting with research into the firm, participating in investor road shows, and helping to shape the deal. Upbeat research reports and positive recommendations published after the offering is completed may generate new stock issues from other investment banking clients.

3.1.1.3. Need for brokerage commissions and maintenance of long-term business

Recent literature documents that the need to maintain long-term business relationships with important investor clients may induce analysts to compromise their objectivity. A typical case would be to issue recommendations that facilitate execution of trade orders by important clients (Berglund et al., 2007). As an example, take a client that has contacted the brokerage firm to place a large block of shares at the present market price. In such a case, it may be tempting for the brokerage firm to mobilize buyers by issuing a buy recommendation. At stake are not only the commissions of the large transaction but also future brokerage commissions that may depend on how satisfied the client is with the execution of his trade.

3.1.2. Conflicts of interests due to analysts' compensation structure

Analysts are professionals who want to build and maintain their credibility, but at the same time they are also subject to pressures from their employers who want to promote the firm's investment banking business. Analysts' compensation is, therefore, based not only on the accuracy of their research but also on the investment banking deals and brokerage commissions generated by them. Brokerage firms are interested in providing economic incentives to their analysts so as to increase the firm's revenues. Since trading commissions and investment banking fees are the most important revenue sources for investment banks and brokerage houses, a contract that links analysts' performance in generating trading commissions and investment banking business to their compensation will align analysts' interests with their employers' interests (Dugar and Nathan, 1995; Lin and McNichols, 1998). Past research has also acknowledged that the lack of objectivity on the part of analysts is exacerbated by their compensation structure. For example, Hong and Kubik (2003) explain analysts' bias by blaming the reward system used by brokerage firms. Their findings show that analysts who are optimistic are much less likely to be fired from the top brokerage firms, and are much more likely to be promoted or be hired by more reputable brokerage firms.[7]

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[7] Similarly, Smith et al. (2003) document that when one of the analysts at Goldman Sachs was asked about his most important goals, he responded by "Get more investment banking revenues, get more investment banking revenues, and get more investment banking revenues".

3.2. Reputation and career concerns

Financial analysts are usually ranked according to the accuracy of their forecasts and the value of their recommendations. Several rating agencies expend substantial resources to publish analysts' rankings. For example, each year, Institutional Investor publishes analyst ranking known as "All-American Research Team" and The Wall Street Journal publishes ranking with the name of "Best on the Street". Academic literature has shown that incentives for biased research are to some extent mitigated by analysts' desire to gain reputation for integrity and expertise. This strand of literature documents that a good reputation bestows numerous professional benefits to analysts. Some of them are generation of investment banking business or trading commissions in the long run, increase in job mobility and career advancement, and access to higher-status clients, investors and company executives. For example, Hong and Kubik (2003) show that analysts who provide reliable and timely forecasts generate higher brokerage business for their firms. Consequently analysts with a good reputation are also compensated more than less well known analysts. Kessler (2001) shows that being part of "All-American Research Team" or "Best on the Street" is the most important determinants of analyst compensation. Thus, analysts' wish to improve their rankings will induce them to publish more informative and less biased research reports. Fang and Yasuda (2004), while studying the effect of analyst reputation on earnings forecast accuracy, document that analysts' reputation does mitigate some of the adverse effects of conflicts of interests that analysts face in their jobs. They show that analysts belonging to "All-American Research Team" are significantly more accurate than "non-All-American Research Team" analysts.

4. Importance of analysts' recommendations

Analysts' recommendations and opinions have proved to be value relevant and influential. SEC (2001) has recognized their importance by stating: "They (analysts) exert considerable influence in today's marketplace. Analysts' recommendations or reports can influence the price of a company's stock – especially when the recommendations are widely disseminated through television appearances or through other electronic and print media. The mere mention of a company by a popular analyst can temporarily cause its stock to rise or fall – even when nothing about the

company's prospects or fundamentals recently has changed". Academic research has also documented that analysts' recommendations are associated with substantial impacts on stock prices. Womack (1996) found out that new changes in recommendation such as "added to the buy list" and "removed from the buy list" have significant impacts on both price and volume. While, Jegadeesh and Kim (2006) find that stock prices react significantly to recommendation revisions on the day of recommendation and on the following day. They document that stock prices continue to drift up for upgrades and down for downgrades over the next two to six months. Findings of these and numerous other studies indicate that analysts' recommendations do contain significant amount of information and investors can benefit from them.

The impact of analysts' recommendations on stock prices make investors pay a lot of attention to what analysts say. Thus, it is hardly surprising that a number of researchers have focused on analyzing analysts' recommendations and the objectivity of these recommendations. A number of papers have accused analysts of trying to propagate enthusiasm about the firms they cover, irrespective of their own personal opinions of these firms as investment objects. The general consensus of this literature is that analysts provide recommendations that are overly optimistic and do not properly reflect the true beliefs about the value of stocks (Agarwal and Chen, 2004).

5. Geographic location and analysts

Prior literature has documented a strong link between geographic proximity and information flow. This strand of literature argues that geographic proximity provides access to private information and is inversely related to the cost of information acquisition. Investors located near a firm can visit the firm's operations, talk to suppliers and employees, as well as assess the local market conditions in which the firm operates (Coval and Moskowitz, 2001). This strand of literature maintains that such interaction gives local capital market participants better information about the payoffs of local assets and thus enables them to perform better relative to more distant foreign participants – "Geographic Information Asymmetry Hypothesis" (hereafter GIAH).

GIAH highlights the importance of geography in explaining analysts' performance by arguing that "the ability of local analysts to make house calls rather than conference calls, during which time they can meet CEOs face-to-face and survey

the firm's operations directly, provides them with an opportunity to obtain valuable private information" (Malloy, 2005). Geographic proximity of these analysts with the firms, thus, translates into information gathering that is superior in quality to information gathered by geographically distant analysts. Better understanding of local languages, customs, and cultures along with larger clienteles in local markets may also give local analysts an advantage in producing accurate forecasts in their local markets (Hau, 1999; Orput, 2004).

The arguments put forward in support of the GIAH make the implicit assumption that the most valuable firm related information originates in local markets. Therefore, it should be local analysts who perform better relative to foreign analysts. This importance of geographic proximity becomes more pronounced in emerging markets where information disclosure is limited. Prior literature has exhaustively documented the mechanisms that are responsible for lower disclosure of information in emerging markets. Some of these are lack of investor protection laws, ineffectiveness of board of directors, family controlled firms, divergence between cash flow and voting rights, and inappropriate accounting standards.[8] Prior literature documents Stultz et al. (2005) document that poor information disclosure by emerging market firms enhance the information advantage possessed by local analysts.

However, there can be an argument that a local information advantage is less pronounced for the increasing number of emerging market firms that are almost exclusively dependent on foreign markets for their profits. Computer/electronic manufacturers in Taiwan, for example, exported 74 percent of their product to the West and the US in 2000. Similarly, the top four South Korean automobile manufacturers exported 76% of their output in 2004. It is natural that firms having increased reliance on foreign markets are less affected by the local economic conditions. For such firms, the bulk of important information originates in foreign markets, i.e. information regarding firm's customers and demand of firm's products. Foreign analysts, being associated with brokerage houses with greater international networks, are, therefore, naturally the ones that can gather information about such firms much more efficiently than local analysts. Thus, there is no a priori reason for us to think that for such firms, analyst being located close to a firm's head-office is more important than analyst being located near the firm's customers. Furthermore, a careful

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[8] See Nam and Nam (2004) for more details about the governance problems in Asian emerging markets.

look at the functioning of analyst industry in emerging markets reveals that it is usually local analysts that bear the bulk of investment banking and underwriting pressures. Data on underwriting business in Asian emerging markets show that local lead underwriters dominate the underwriting business in these markets. Local lead underwriters for equity issues in these markets amounted to around 78.77% in Indonesia, 97.67% in Malaysia, 94.85% in Thailand, and 96.37% in South Korea between 1994 and 2003. Greater underwriting and investment banking pressures may induce geographically proximate local analysts to compromise their objectivity and issue biased forecasts and recommendations. Lai and Teo (2006) argue that significant presence of local analysts in underwriting and investment banking business result in over optimistic local analysts in these markets. In the presence of such pressures, there is no a priori reason to think that local analysts' recommendations are more informative than foreign analysts' recommendations.

6. Summary of Essays

Financial crisis of 1997-98 brought about a significant decline in investor's confidence in the Asian emerging markets. As a result of which stock markets declined by 87.6% in Indonesia, 85.6% in Malaysia, 83.3% in Thailand, and 77.4% in Korea from January 1996 to August 1998 (Ang and Ma, 2001). Such a massive reversal of economic fortunes in Asian emerging markets arguably should have significant impact on market financial analysts as well. In this thesis, we will investigate how the financial crisis affected the performance of financial analysts in the crisis-hit countries.

The first essay documents the performance of analysts' recommendations in the crisis-hit countries during financial crisis of 1997-98. The results show that the earlier work that documents analysts' performance has been too simplistic, and has thus produced misleading results. Prior literature uses the spread between analysts' buy and sell recommendations as a measure of performance. We show that this measure may produce misleading results since the spread can be dominated by the performance of either buy of sell recommendations. In the first paper, the performance of analysts' buy and sell recommendations are analyzed separately and it turns out that for foreign analysts their buy, and for local analysts their sell recommendations, perform better than the competing recommendations.

The second essay highlights the importance of governance mechanisms for analysts' performance. This essay shows that improvements in information dissemination eliminated any information advantage that local analysts enjoyed in the pre-crisis period. Our results show that as the crisis-hit countries implemented the necessary governance reforms, the information advantage that local analysts held during the pre-crisis period disappeared completely. The results suggest that the reforms in the crisis-hit countries were successful in a way that they leveled the playing field for analysts coming from different parts of the world.

The third and final essay shows that in the wake of substantial uncertainty trusted foreign analysts have a considerable impact on flows of foreign money into individual firms. This substantial inflow of foreign money in response to foreign analysts' recommendations resulted in better stock price performance of those firms. Our results show that foreign investors base substantial amount of their trade on foreign analysts' buy recommendations. We argue that better performance of foreign analysts' buy recommendations relative to their counterparts' recommendations may be due to this behavior of foreign investors.

Below we will separately discuss the main findings and contributions of each of the three essays included in the thesis.

Essay 1: Who was informative? Performance of foreign and local analysts' stock recommendations during the Asian financial crisis

Prior literature has documented a strong link between geographic proximity and information flow. This strand of literature maintains that geographic proximity provides access to private information and is inversely related to the cost of information acquisition. Investors located near a firm can visit the firm's operations, talk to suppliers and employees, and assess the local market conditions in which the firm operates better than more distant investors (Coval and Moskowitz, 2001). Following similar arguments, Malloy (2005) argues that "the ability of local analysts to make house calls rather than conference calls, during which time they can meet CEOs face-to-face and survey the firm's operations directly, provides them with an opportunity to obtain valuable private information". Geographic proximity is, thus, a reasonable proxy for the quality of analyst information. Moreover, in international settings, international borders introduce further barriers to the flow and acquisition of

information. Theoretically, it should tilt the information advantage further in the favor of local analysts (Stultz et al., 2005; Orput, 2004).

However, a competing strand of empirical literature contests this result and documents information advantage for foreign analysts (Higgins, 2002; Bacmann and Bolliger, 2001). Interestingly, this information advantage for foreign analysts has exhibited more persistence during periods of extreme uncertainty. Vast amount of literature on relative performance of foreign and local investors during Southeast Asian financial crisis of 1997-98 overwhelmingly suggest that information advantage might have existed for geographically distant foreign analysts (Kamesaka and Wang, 2004a; Kamesaka and Wang, 2004b; Kim, 2002). All of these studies document superiority of foreign investors during the time of Southeast Asian crisis.

These contradicting results make careful reinvestigation of the relative performance of foreign and local analysts an interesting task. Ex ante, it is difficult to foresee which group of analysts, i.e. foreign or local, was better at analyzing Southeast Asian firms during the financial crisis. In this paper, we will reinvestigate the issue and document relative performance of foreign and local analysts' stock recommendations in Indonesia, Malaysia, Thailand, and South Korea during financial crisis of 1997-98. Our study departs from the prior studies such as Kamesaka and Wang (2004a), Kamesaka and Wang (2004b), and Kim (2002) by focusing primarily on the relative performance of foreign and local analysts, instead of investors. Since, foreign and local analysts have significant differences in their modes of operations, so it is worthwhile to see whether these differences are also translated into conflicting recommendations. It is highly relevant matter if we want to understand differences in investment behavior of foreign and local investors. It is also worthwhile to mention here that there is no attempt, to the best of our knowledge, which documents relative performance of financial analysts during Southeast Asian financial crisis of 1997-98. We aim to fill this gap by documenting how foreign and local analysts' stock recommendations performed relative to each other during that turbulent time period.

Our results show that foreign analysts' buy recommendations outperform local analysts' buy recommendations, while local analysts' sell recommendation perform much better than foreign analysts' sell recommendations. These results refute the idea of complete information advantage of one group over the other. Had local or foreign analysts held complete advantage over the other, their buy and sell recommendations would have outperformed the other in both cases. Our results also provide evidence

that foreign analyst following is an important determinant of within the crisis firm performance. Firms followed by foreign analysts lost relatively less of their value around the recommendation dates as compared to firms followed by local analysts. Our results are persistent across all countries even after controlling for numerous control variables such as optimism, size, analyst following, and governance.

Essay 2: Did governance reforms have had any impact on the relative performance of foreign and local analysts in the crisis-hit Asian markets?

Any list of major economic events of the past century should prominently feature the financial crisis that hit Southeast Asia in the middle of 1997. The crisis led to sharp declines in the currencies, stock markets, and other asset prices in the crisis-hit countries. Prior literature holds poor governance mechanisms that prevailed in the crisis-hit countries as one of the main reasons for Southeast Asian financial crisis. Recognizing the importance of governance mechanisms, the governments of the crisis-hit countries initiated programs of structural reforms to remedy inadequacies of these mechanisms. However, there is an ongoing debate on whether the governance reforms that were undertaken after the onset of crisis proved effective or not. Since the governance reforms should have improved the information disclosure in crisis-hit countries one way to judge the effectiveness of these reforms is to see whether they were successful in eliminating information asymmetries between foreign and local analysts. If the reforms were successful, we would expect a significant reduction in any information advantages that local analysts may have held during the pre-crisis period.

In this paper, we study performance of foreign and local analysts' stock recommendations in Indonesia, Malaysia, Thailand, and South Korea during the period proceeding, within, and preceding the Southeast Asian financial crisis. Since these periods are also characterized by different governance regimes any differences in the performance of analysts' recommendations may have been due to the differences in the governance mechanisms that prevailed during that time period. Since poor governance mechanisms should impede the disclosure of information analysts that are geographically distant should be at a disadvantage relative to those that are at geographically close by. Consistent with this view, our result shows that local analysts held significant information advantage relative to foreign analysts in the

crisis-hit countries prior to crisis. We argue that superiority of local analysts during the pre-crisis period may partly be explained by the absence of proper governance and disclosure mechanisms, which made it difficult for foreign analysts to access relevant private information. However, as the governance mechanisms improve, we should observe a significant reduction in the information advantage possessed by local analysts. As expected, our results document that as the crisis-hit countries implemented the necessary governance reforms after the outbreak of the crisis, the information advantage that local analysts held during the pre-crisis period disappeared completely. Our results show that there was no significant difference between foreign and local analysts' recommendations during the post-crisis period. One of the reasons for the disappearance of local analysts' information advantage may be the structural reforms that took place in the crisis-hit countries after the outbreak of crisis. We argue that reforms significantly improved the governance mechanisms, which eventually led to the improvement in the disclosure of information in the crisis-hit countries.

Surprisingly, our results show that on average foreign and local analysts were not able to differentiate good firms from bad firms in these countries in the post-crisis period. This result is in contrast to our expectations as governance reforms should have made it easier for analysts to differentiate good firms from bad firms in the post-crisis period, but this result may be driven by the fact that the most spectacular post-crisis recoveries were observed for the firms for which analysts as well as investors may have held a very critical view. The firms belonging to Industrial and Financial sectors were the ones that came under immense criticism during the crisis period. Prior research, however, has revealed that some of the firms in these sectors were the ones that led the recovery in these markets. We argue that large positive surprises occurred precisely in firms that were written off by analysts and investors which explain why sell recommended stocks in our sample on an average outperformed buy recommended stocks during the post-crisis period.

Essay 3: Information, optimism, or influence: What determines the relative performance of foreign and local analysts during the crisis period? Evidence from an emerging market

Recent studies have shown that foreign analysts' buy recommendations outperform local analysts' buy recommendations, while local analysts' sell

recommendations perform superior to foreign analysts' sell recommendations in emerging stock markets (Lai and Teo, 2006; Farooq, 2006). One of the reasons cited for this asymmetric result is that local analysts are overly optimistic in their recommendations (Lai and Teo, 2006). Because local analysts are more eager to issue buy recommendations, local analysts' buy recommendations contain less positive information than foreign analysts' buy recommendations. Lai and Teo (2006) argue that for this reason, foreign analysts' buy recommendations outperform local analysts' buy recommendations. Moreover, they also suggest that due to local analysts increased reluctance to issue sell recommendations as compared to foreign analysts, their sell recommendations contain more negative information than foreign analysts' sell recommendations. They conclude that this is the main reason why local analysts' sell recommendations outperform foreign analysts' sell recommendations.

In this paper, we depart from the earlier information centric arguments (Lai and Teo, 2006) regarding relative performance of foreign and local analysts' recommendations and propose that analysts' ability to influence investors, especially during the periods of extreme uncertainties, can explain their relative performance during those periods better than the information centric arguments. Using the analysts' recommendations and investors' trading data from South Korea, we show that foreign analysts' buy recommendations and local analysts' sell recommendations are more influential than their counterpart recommendations during the financial crisis of 1997-98.

Our results show that foreign analysts' buy and local analysts' sell recommendations generate significantly more subsequent buying and selling trades than their respective counterpart recommendations. We also show that that this trade generating ability of foreign analysts' buy and local analysts' sell recommendations is not due to the fact that these recommendations possess more information than their respective counterpart recommendations. Instead, it is due to the increased influence that these recommendations have on certain investor groups during the periods of extreme uncertainty. For example, foreign investors, being more risk averse, are more inclined to buy those stocks where they have outside analysts to blame if their investment turn out to be a failure. While, their selling decisions are usually governed by the Principals' requirements, which can simply force them to exit the stocks irrespective of analysts' recommendations during the periods of crisis. It, therefore, indicates that it may not be the information contents in analysts' recommendations,

but their ability to influence investors to undertake certain type of trade, which is responsible for asymmetric performance of foreign and local analysts' recommendations as reported in Farooq (2006). Our explanation is consistent with the previous literature that shows that buying and selling pressures, i.e. demand and supply shocks, has a strong impact on stock prices and returns (Gompers and Metrick, 2001).

Who was informative? Performance of foreign and local analysts' stock recommendations during the Asian financial crisis

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Abstract

This paper examines foreign and local analysts' performance in Indonesia, Malaysia, Thailand, and South Korea during the financial crisis of 1997-98. Unlike most of the prior studies that document information advantage in favor of one of the two groups, we provide strong evidence that neither of them held complete information advantage over the other during the crisis period. Our results show that foreign analysts' buy recommendations were significantly more informative than local analysts' buy recommendations, while local analysts' sell recommendations contained significantly more information than foreign analysts' sell recommendations. Our results provide evidence that neither of the explanations advanced in the literature to explain relative performance of foreign and local analysts hold during the investigated period of extreme uncertainty.

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1. Introduction

Prior research has produced contradicting results on the relative performance of foreign and local analysts. The stream of literature that documents superiority of local analysts maintains that "the ability of local analysts to make house calls rather than conference calls, during which time they can meet CEOs face-to-face and survey the firm's operations directly, provides them with an opportunity to obtain valuable private information" (Malloy, 2005). Geographic proximity of these analysts with the firms, thus, facilitates information gathering that results in better quality information than the one obtained by geographically distant analysts. However, a competing strand of literature argues that due to better resources, superior expertise, and greater talent, foreign analysts outperform their geographically proximate local counterparts (Higgins, 2002; Bacmann and Bolliger, 2001).

This paper provides evidence that neither of the explanations put forward to explain relative performance of foreign and local analysts hold during a period of extreme uncertainty. Using a large dataset of analysts' recommendations from four crisis-hit Southeast Asian countries, we find that foreign analysts' buy recommendations outperform local analysts' buy recommendations, while local analysts' sell recommendations outperform foreign analysts' sell recommendations during the financial crisis of 1997-98. Had local or foreign analysts held complete advantage over the other, their buy as well as sell recommendations would have outperformed the other. The results documented in this paper are persistent across all countries even after controlling for features such as optimism, size, and analyst following.

Stock returns that follow the issuance of analysts' recommendations indicate that foreign analysts' buy recommended stocks produced significantly higher returns than local analysts' buy recommended stocks over a period of approximately four months in all four crisis-hit Southeast Asian countries during the financial crisis of 1997-98. Foreign analysts register their strongest performance in South Korea where their buy recommended stocks significantly outperform local analysts' buy recommended stocks for all holding periods and by as much as 9.1 basis points. Foreign analysts' performance is weakest in Indonesia where there is no significant difference between foreign and local analysts' buy recommendations.

Unlike what we observe for buy recommendations, our results show that local analysts' sell recommendations contain significantly more information than foreign analysts' sell recommendations in all of our sample countries. Local analysts post their strongest performance in South Korea where their sell recommended stocks outperform foreign analysts' sell recommended stocks for all holding periods and by as high as 9.5 basis points. Their superior performance is weakest in Thailand where their superiority disappears after a holding period of 28 days.

One of the reasons cited for this asymmetric result is that local analysts are overly optimistic in their recommendations (Lai and Teo, 2006). Because local analysts are more eager to issue buy recommendations, local analysts' buy recommendations are less selective in picking out good firms than foreign analysts' buy recommendations. Lai and Teo (2006) argue that for this reason, foreign analysts' buy recommendations outperform local analysts' buy recommendations. Moreover, they suggest that due to local analysts' higher reluctance to issue sell recommendations as compared to foreign analysts, their sell recommendations are more selective in picking out badly performing firms than foreign analysts' sell recommendations. Lai and Tao (2006) conclude that this is the main reason why local analysts' sell recommendations outperform foreign analysts' sell recommendations.

Taking note of the concerns in Lai and Teo (2006), we re-estimated our results after controlling for optimism in local analysts' recommendations. The subsequent results suggest that, contrary to what Lai and Teo (2006) documented, optimism in local analysts' recommendations does not account for any of the performance difference between foreign and local analysts' recommendations. Neither the difference between foreign and local analysts' buy recommendations nor the difference between their sell recommendations decreased after controlling for optimism.

Our results differ from the findings of previous studies on relative performance of foreign and local analysts by not finding superiority of any one group over the other (Stultz et al., 2005; Bacmann and Bolliger, 2001). One reason for this difference may be the fact that most of the prior studies use the spread between analysts' buy and sell recommendations as a measure of performance (Chang, 2004),

while we use the spread between foreign and local analysts' buy recommendations and the spread between their sell recommendations as a measure of performance.[10]

We show that use of the spread between analysts' buy and sell recommendations, as a measure of performance, may produce misleading results. Our results show that the spread between analysts' buy and sell recommendations yield superior performance for local analysts in South Korea and Indonesia, while it results in superior performance for foreign analysts in Malaysia. We also show that the spread between analysts' buy and sell recommendations produce inconclusive results in Thailand. The explanation for these differences in outcome is that the spread between foreign and local analysts' sell recommendations in South Korea and Indonesia is much greater than the corresponding spread between their buy recommendations. Therefore, the resulting spread between local analysts' buy and sell recommendations is much larger than the resulting spread between foreign analysts' buy and sell recommendations. Thus, any study that evaluates the performance of analysts based on spread between analysts' buy and sell recommendations would yield superior performance for local analysts in South Korea and Indonesia. Analogously for Malaysia, we obtain superior performance for foreign analysts because the spread between foreign and local analysts' sell recommendations is much smaller than the spread between their buy recommendations. These results are useful reminder of the pitfalls in using the spread in performance between analysts' buy and sell recommendations as a measure of analysts' performance.[11]

The remainder of the paper will proceed as follows: Section 2 surveys recent literature and relates to the research question addressed in this paper. Section 3 presents alternative arguments that can be put forward to explain relative performance of foreign and local analysts during crisis period. Section 4 discusses the data used in this study as well as an exploration of summary statistics. Section 5 presents assessment of the relative performance of foreign and local analysts buy

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[10] Jegadessh and Kim (2006) consider spread between upgrades and downgrades as the measure for overall value of analysts' recommendations. While, Chang (2004) consider spread between analysts' buy and sell recommendations as a measure of analysts' performance.

[11] We believe that results obtained by Chang (2004) where he documented information advantage for analysts having local presence, might be driven by the superior performance of either buy or sell recommendations. So, to claim informativeness of analyst on the spread between analysts buy and sell recommendations is misleading. For analyst to be informative, his buy as well as his sell recommendations should outperform the other.

recommendations as well as their sell recommendations. The paper ends with Section 6 where we present conclusions.

2. Motivation and background

Prior literature has documented a strong link between geographic proximity and information flow. This strand of literature maintains that geographic proximity provides access to private information and is inversely related to the cost of information acquisition. Investors located near a firm can visit the firm's operations, talk to suppliers and employees, as well as assess the local market conditions in which the firm operates (Coval and Moskowitz, 2001). Following similar arguments, Malloy (2005) argues that "the ability of local analysts to make house calls rather than conference calls, during which time they can meet CEOs face-to-face and survey the firm's operations directly, provides them with an opportunity to obtain valuable private information". Geographic proximity is, thus, also a reasonable proxy for the quality of analyst information. He documents that geographically proximate analysts are indeed better in predicting stock returns for local firms than geographically distant analysts due to superiority of their information.

Unlike Malloy (2005), who documents performance of geographically proximate and geographically distant analysts within national borders, we document performance of analysts across international borders. Generally, it has been believed that as a result of their across the border location, foreign analysts should exhibit an informational disadvantage relative to local analysts. Their disadvantageous location emasculates their ability to gain cultural and institutional knowledge, minimizes their ability to develop better feel for market conditions, and presents them with reduced opportunities to develop valuable human networks that could prove useful in picking up hints of substantial changes in prospects for individual firms. All of these factors make it more difficult for foreign analysts to produce timely and informative information. In a recent paper, Stultz et al. (2005) demonstrate that local analysts make more precise earnings forecasts for firms than foreign analysts. Using firms' data from 32 countries, they find a statistically significant advantage for local analysts even after controlling for firm and analyst characteristics. Chang (2004) examines data from Taiwan and concludes that analysts with local presence significantly outperform analysts that do not have local presence. However, there are also a number

of studies that document superior performance of foreign analysts. Bacmann and Bolliger (2001) investigate the relative performance of local and foreign financial analysts in Latin American emerging markets from 1993 to 1999 and show that foreign analysts produce more timely and accurate forecasts than their local counterparts. Higgins (2002) analyzes analyst data for Japanese firms and finds that analysts located in the U.S. working for U.S. brokerage firms forecast earnings of Japanese firms better than the analysts located in Japan working for Japanese brokerage firms.

Studies that document local analyst advantage posit that information asymmetries created due to distance lead to superior performance of local analysts. These studies argue that geographical proximity of analysts with firms allow them to communicate directly with firms' executives and employees, helps them to develop personal relationship with management which they may tap to obtain timely information[12], and develop better feel for market conditions in which firms operate (Stultz et al., 2005; Orput, 2004; Chang, 2004). All of these factors give local analysts information advantage over remotely located foreign analysts.[13] In contrast, studies that highlight superiority of foreign analysts argue that due to their access to better resources, better trained expertise, and greater talent, foreign analysts outperform their geographically proximate local counterparts in emerging markets. Foreign analysts, furthermore, face less of investment banking pressures as compared to local analysts, thereby allowing for more objective and accurate assessment of new information (Higgins, 2002; Bacmann and Bolliger, 2001).

These contradicting results make careful reinvestigation of the relative performance of foreign and local analysts an interesting task. On one hand, conventional wisdom holds that geographically proximate local analysts have more information than geographically distant foreign analysts. Importance of geographic proximity is enhanced many folds in Southeast Asian economies where information disclosure by firms is relatively of poor quality, and therefore close personal networks

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[12] Personal networks and connections are dominant in most of the Asian countries. These relationships are generally referred in literature by specific terms such as "Guanxi" in China, "Kwankye" in Korea, and "Kankei or Toyama no Kusuri" in Japan. Prior literature documents Asian analysts' ability to acquire information using these networks as one of the most important determinants of their information (Mande and Kwak, 1996; Martin, 1999).

[13] We believe that with the vast increases in the use of information technology, local analysts' information advantage that results from their geographic proximity will diminish with the passage of time. However, in the period under discussion, use of technology was not wide spread and geography was relatively a more critical factor for the information acquisition.

may play a vital role in accessing relevant information. Foreign analysts, lacking these personal contacts, are likely to be at a disadvantage in this respect. On the other hand, there is an abundance of empirical literature that indirectly documents information advantage for foreign analysts. For example, Seasholes (2004) reports that foreign market participants are better informed than their local counterparts while trading large firms with low leverage. Moreover, most of the firms in Southeast Asian markets possess certain characteristics that might make it possible for foreign analysts to become more informed than local analysts although the opposite may hold for average firms. As an example consider computer/electronics or automobile manufacturers in Southeast Asia that earn the bulk of their profits by selling their products abroad. For such firms, having better information about firm's customers and demand of firm's products could be as important an information as having access to insider information. There is no a priori reason for us to think that for such firms, an analyst who is located close to a firm's head-office is better informed than an analyst who is located near the firm's customers. Similarly, arguments given in favor of a foreign analyst advantage, such as their access to better resources, higher expertise, and greater talent, might not hold true if the information that is being officially disclosed by firms is of poor quality. In a recent paper, Stultz et al. (2005) conclude that poor information disclosure by emerging market firms offset any advantage that foreign analysts might possess.

In this paper, we re-assess the relative performance of foreign and local analysts' stock recommendations in Indonesia, Malaysia, Thailand, and South Korea during the financial crisis of 1997-98. In spite of the fact that there is a vast amount of literature that studies relative performance of foreign and local investors during Asian financial crisis, there is no attempt so far, to the best of our knowledge, to document relative performance of financial analysts during that time period. We aim to fill this gap by documenting how foreign and local analysts' stock recommendations performed relative to each other during that exceptionally turbulent time period.

3. Who held the advantage during Asian financial crisis?

Little is known about the relative performance of foreign and local analysts during a time of economy-wide financial crisis. However, there are plentiful of closely related studies that from which plausible arguments regarding superior

performance of either foreign analysts or local analysts during the crisis period can be drawn. In this section, we will relate some of these arguments as they form the nucleus of arguments presented thus far in prior literature to explain analysts' performance during the Asian financial crisis period.

3.1. Local analyst advantage

There are plenty of strong theoretical arguments that can be put forward to argue that local analysts held information advantage over foreign analysts in South Korea, Thailand, Indonesia, and Malaysia during the financial crisis of 1997-98. Most of these arguments revolve around two themes: (1) Poor quality of firm-level disclosed information and (2) Geographic proximity of local analysts with the firms. We will briefly discuss both of these in the following sub-sections.

3.1.1. Poor quality of firm-level disclosed information

Most of the arguments put forward in support of foreign analyst advantage are based on the implicit assumption that firm-level publicly disclosed information is informative. Proponents of foreign analyst advantage argue that due to their better training and expertise, foreign analysts are able to process publicly disclosed information more efficiently than their local counterparts, thereby being able to extract information that is more valuable. Importance of firm-level publicly disclosed information is evident from the enormous amount of literature that documents its strong ability to predict future firm performance. Ou and Penman (1989) show that information contained in historical financial statements can accurately predict future changes in earnings; while Holthausen and Larcker (1992) document that past financial information can be used to successfully predict future excess returns. Abarbanell and Bushee (1998) use historical financial information to document that an investment strategy can be created based on historical information, to yield significant abnormal returns. Piotroski (2000) shows that investors can easily separate out winners from losers by using simple screens based on historical financial information. He documents that a simple accounting based fundamental analysis strategy can earn significant abnormal returns.

Most of these studies use data for firms listed in developed Western financial markets, where publicly disclosed information is of highest quality. However, the same results may not necessarily hold in emerging financial markets, where quality of information disclosed is questionable. In fact, International Accounting and Auditing Trends (1995) reports that firm-level publicly disclosed information in Asian financial markets is not as informative as those disclosed in developed Western countries. Poor governance mechanisms are cited as one of the main reasons why effective information disclosure environment could not evolve in Southeast Asia. Leuz et al. (2003) note that managers and insiders were not mandated to disclose true underlying economic conditions of their firms in the crisis-hit Southeast Asian economies. Moreover, prior literature has also documented that disclosure quality in Southeast Asian countries deteriorated further after the onset of financial crisis in 1997-98. Eng et al. (2005) show that informativeness of accounting measures such as earnings, cash flows, and accruals deteriorated over the crisis period in Asian economies.

We argue here that in the absence of informative firm-level information, foreign analysts might not be able to produce as informative forecasts and recommendations as they are capable of producing in the presence of informative firm-level information. The arguments supporting foreign analyst advantage, thus, break down if the quality of information disclosed is poor. Prior literature also shows that when firm information is less transparent, foreign analysts do not provide as informative estimates as local analysts (Stulz et al., 2005). Therefore, it seems likely that foreign analysts might not have been able to extract information that was superior to that extracted by local analysts during Asian financial crisis of 1997-98.

3.1.2. Geographic proximity of local analysts with the firms

One of the consequences of poor corporate governance mechanisms was that proper disclosure mechanisms could not evolve in Southeast Asia. In the absence of good corporate governance mechanisms, there were few incentives for managers and insiders to disclose true underlying economic conditions of their firms (Leuz et al., 2003). Without such mechanisms, it became extremely difficult for analysts to gauge true value of firms and they had to rely heavily on their private sources to get valuable firm related information to make informative forecasts and recommendations. Therefore, private information took a central role in the quality of analysts' forecasts

and recommendations. This additional private information enabled analysts to discriminate between the firms that were relatively weak and those that were in relatively healthy condition during the crisis period.

We argue that after the onset of the crisis local analysts were in a better position to obtain information supplementing what was publicly available about the firms. Prior literature has cited several reasons for why local analysts might have been better placed to acquire private information. Most important among them is the close personal ties that Asian local analysts enjoyed with the firms they cover. Mande and Kwak (1996) and Martin (1999) consider these personal ties as a source of prime importance for analysts in accessing relevant firm-level private information in the information scarce Asian economies. Closer ties that local analysts enjoyed with firms are further aided by overwhelming underwriting and investment banking relationship of local brokerage houses in Asian economies (Sullivan and Unite, 2001; Kim et al., 1995). Investment banking relationships and underwriting are considered as the single most important channel through which analysts can build close ties with the management. Closer relationship with the management allows local analysts to obtain information that foreign analysts cannot obtain. Moreover, geographic proximity also enable local analysts to become more familiar with target firms, communicate directly with firms' employees, develop better feel for delicate macro-economy of Asian economies, and have first hand knowledge of investors' sentiments that may play a central role in determining the stock price performance of firms. On the other hand, foreign analysts, operating from a geographically disadvantageous location, do not enjoy any of the benefits that local analysts have. They neither have close special ties with the firms they are covering nor have better relationship with the management, probably due to limited underwriting and investment banking activity. Limited underwriting and investment banking activity also points to the fact that foreign analysts face greater information barriers while operating in Asian emerging markets. Hence, access to reliable private information and a better feel for market conditions might have allowed local analysts to extract information that was of superior quality in comparison to information extracted by foreign analysts in the crisis period.

3.2. Foreign analyst advantage

Traditional arguments may not support foreign analysts' advantage during Asian financial crisis of 1997-98, but there is ample amount of empirical evidence that suggest the contrary, i.e. superior performance of foreign analysts. Much research on relative performance of foreign and local investors during Asian financial crisis of 1997-98 overwhelmingly suggests that information advantage might have existed for geographically distant foreign analysts. Studies covering all of the crisis hit countries, except Malaysia, show that foreign investors enjoyed information advantage over local investors. Surprisingly, we could not come across any study that documents relative performance of foreign and local investors in Malaysia.

Kamesaka and Wang (2004b) investigated aggregate daily trades of foreign and local investors in Indonesia and found superior returns for foreign investors buying from local investors over local investors buying from foreign investors. They showed that superior performance of foreign investors is confined solely to crisis period, as it disappeared after the crisis. In another related study on relative performance of foreign and local investors, Kamesaka and Wang (2004a) found out that there was considerable wealth transfer of around 6.4 to 63 million dollars from local investors to foreign investors in Thailand during financial crisis of 1997-98. They also documented that foreign investors not only traded with good timing but also earned significantly higher returns than local investors in Thailand during the crisis period. Kim (2002) examines daily transactions in Korea from 1997 to 2000 and showed that foreign investors outperformed local investors in large stocks. Superior performance of foreign investors was not confined to crisis hit countries alone. In fact, superiority of foreign investors could be traced to the neighboring financial markets as well. Karolyi (2002) examined aggregated weekly investment flow in Japan from January 1995 to March 2001 and provided evidence that foreign investors traded with good timing during his sample period. In a related study on relative foreign and local analysts performance during crisis period, Higgins (2002) analyzed analyst data for Japanese firms from 1989 to 1998 and found that analysts located in the U.S. working for the U.S. brokerage firms forecast earnings of Japanese firms better than the analysts located in Japan working for Japanese brokerage firms. It is important to note that Japan was suffering from a long and country-specific economic stagnation during the time period analyzed in both of these studies (Karolyi, 2002; Higgins, 2002).

Taken together, these studies can be taken to indicate that the superiority of foreign investors might be due to superiority of foreign analysts in Japan. If we assume that foreign analysts primarily cater to foreign investors and local analysts serve local investors, then we have evidence to suggest that foreign analysts might have outperformed their local counterparts in Indonesia, Malaysia, Thailand, and South Korea during the financial crisis of 1997-98.

4. Data

We choose Indonesia, Malaysia, Thailand, and South Korea for this study as these were the countries that were hit the hardest by the financial crisis of 1997-98. The sample period for this study is from July 2, 1997 to August 31, 1998. The beginning of the crisis period corresponds to the devaluation of the Thai baht on July 2, 1997. Most of the literature on Asian financial crisis considers devaluation of the Thai baht as a starting point of the crisis. July 2, 1997 also corresponds to the date when all of the four markets under discussion began their downward movement together. The ending point of the crisis period corresponds with the date on which all of the indices began a sustained upward movement. Figure 1 presents graphs of market indices of Indonesia, Malaysia, Thailand, and South Korea from July 2, 1997 to December 31, 1999. The figure shows that market indices of all the countries suffered rapid decline after the onset of crisis on July 2, 1997. Figure 1 also shows that market indices of all countries experienced sustained upward movement after August 31, 1998. Due to this reason, we have limited our time period between July 2, 1997 and August 31, 1998.

The reason to choose crisis period and the above mentioned Asian countries for this study is two folds. First, conventional sources of information loose their relevance during turbulent economic conditions. For example, Graham et al. (2000) document similar results for Thai book values during the Asian crisis of 1997-98. Therefore, analysts' role in bringing out new information becomes very crucial for investors. Second, these countries attracted significant interest from foreign analysts. Therefore, it provides us an ideal laboratory for testing analysts' performance.

4.1. 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 14, 28, 42, 56, and 112 days for the firms that were represented in analyst recommendations dataset. 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.

4.2. Classification of analysts

Analysts are classified as foreign or local based on the country of origin of the brokerage houses that employ them. Analysts working for local brokerage houses are classified as local analysts, while analysts working for foreign brokerage houses are classified as foreign analysts.[14]

Brokerage houses are classified as local or foreign depending on two conditions: (1) location of their head-office and (2) presence in the country under discussion. All brokerage houses with head-offices located in Asia and having local presence are classified as local. In contrast, brokerage houses with head-offices located outside Asia and having no local presence are classified as foreign. We obtain information about location of head-offices of brokerage houses from brokerage houses' websites and www.business.com.

It proved difficult to find out if brokerage houses had local presence or not during the time of crisis. Websites of brokerage houses, stock exchanges, or security exchange commissions do not provide much information on that. We, however, used the information provided in I/B/E/S Detail International History-Recommendation file to separate out those brokerage houses that had local presence from those that did not have local presence during crisis period. I/B/E/S file assigns a unique code to each of the contributing brokerage house. Brokerage houses having several subsidiaries have

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[14] We recognize the importance of personal characteristics of analysts in determining their performance, but for this study we have deliberately ignored them. Prior literature also documents that personal characteristics of analysts are of lesser importance in Asian markets as compared to Western markets (Fuchita, 2005). We believe that classification based on brokerage houses will allow us to differentiate analysts in a better way, because local brokerage houses are better placed to provide their analysts a channel to develop those personal relationships and networks that are so important in Asian markets.

separate code for each subsidiary. For example, J. P. Morgan operates across the globe having subsidiaries in all parts of the world. I/B/E/S assigns a unique code to each of its subsidiary. We exploit this property of I/B/E/S data to find out which brokerage house had local presence and which did not have local presence during crisis period. The basic assumption that we make in this process is that if a brokerage house has a local presence, it should issue largest number of its recommendations for firms located in that country. Therefore, if a brokerage house issues the largest number of its recommendations for stocks in country x, we classify it as having local presence in country x.

Table 1 presents descriptive statistics for foreign and local brokerage houses in our sample. It is noteworthy to mention that all countries in our sample attracted substantial interest from foreign brokerage houses during the time of crisis. The number of foreign brokerage houses in fact exceeded number of local brokerage houses in all countries, except in Malaysia where foreign and local brokerage houses are equal.

[Insert Table 1 here]

4.3. Analyst recommendations

We obtain analyst recommendations data from the I/B/E/S International history recommendation database. Our sample covers four Asian countries – Indonesia, Malaysia, Thailand, and South Korea. All of these countries have been identified as the countries that were hit the hardest by the crisis of late 1990s. The time period under discussion spans July 2, 1997 to August 31, 1998. The choice of time period is driven by the previous literature that identifies this time period as the crisis period (Mitton, 2002).

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 file represents the issuance of a recommendation by a particular brokerage house for a specific firm. For instance, one observation would be a recommendation by Brokerage House ABC regarding Firm XYZ. 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. 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 2 presents summary statistics for our final dataset on analyst recommendations. On average foreign analysts issued recommendations for firms with high market capitalization. Except in Malaysia, foreign analysts issued more recommendations per firm in the crisis-hit countries.[15]

[Insert Table 2 here]

Table 3 shows that firms from ten different industries are represented in the sample. Our classification of industries is based on Industry Classification Benchmark (ICB). ICB classification has been created by FTSE. Table 3 shows that foreign and local analysts issued most of their recommendations for Industrial sector in Malaysia and South Korea, and for Financials sector in Indonesia during the crisis period. In Thailand during the crisis period, foreign analysts preferred Industrial sector and local analysts preferred Financials sector in their recommendations. There is no evidence that a particular sector is more intensely followed by a given group of analysts.

[Insert Table 3 here]

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[15] An unreported result shows that foreign brokerage houses substantially decreased their coverage after the onset of crisis, and local brokerage houses considerably increased their coverage after the onset of crisis. In the period between January 1, 1996 and July 1, 1997, foreign analysts' coverage in these countries was equal to 109 firms for Indonesia, 218 firms for Malaysia, 292 firms for Thailand, and 238 firms for South Korea. While, local analysts' coverage for these countries during the same time period amounted to 88 firms for Indonesia, 246 firms for Malaysia, 88 firms for Thailand, and 499 firms for South Korea. Substantial decrease in coverage by foreign brokerage houses might be due to increased information asymmetry that resulted after the onset of financial crisis.

Table 4 shows the number and percentage of each type of recommendations issued by foreign and local analysts during the crisis period. In this table, we have characterized all strong buy and buy as buy recommendations, and all underperform and sell as sell recommendations. Contrary to popular belief that local analysts issue more buy and less sell recommendations when compared to foreign analysts, our result show that local analysts issue a higher percentage of their recommendations as sell and a smaller percentage of their recommendations as buy when compared to foreign analysts in all countries except Malaysia. This is a little surprising because of the dominance of local underwriters in these markets' equity issues (Lai and Teo, 2006; Sullivan and Unite, 2001; Kim et al., 1995). Faced with increased investment banking pressures, local analysts should have issued greater number of their recommendations as buy recommendations.[16]

[Insert Table 4 here]

5. 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). 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 based on less valuable information. We will use this property of information to draw inferences from our results concerning the relative performance of local and foreign analysts' buy as well as their sell recommendations.

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[16] In an unreported result, we document that number of buy and underperform recommendations are very low in these markets. In fact, percentages of buy recommendations by local analysts in these markets are 0% for Indonesia, 20% for Malaysia, 7% for Thailand, and 0% for South Korea. While, percentages of underperform recommendations by local analysts in these markets are 0% for Indonesia, 14% for Malaysia, 2% for Thailand, and 3% for South Korea. Similarly, foreign analysts follow the same behavior. Their percentages of buy recommendations in these markets are 3% for Indonesia, 4% for Malaysia, 6% for Thailand, and 2% for South Korea. Similarly, percentages of their underperform recommendations are 3% for Indonesia, 5% for Malaysia, 6% for Thailand, and 0% for South Korea. This might be due to the fact that most of analysts working in Southeast Asian markets use 3-point system where they rank firms as buy, hold or sell.

5.1. Event-study analysis of the performance of market-adjusted returns following foreign and local analysts' recommendations

The first step in measuring relative performance of foreign and local analysts is to determine whether foreign and local analysts' buy and sell recommendations produce systematically different returns from each other. In this 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 foreign and local analysts, we compute T-day cumulative market-adjusted returns, $CMAR_{S,T,t}$, on stock 'S' as follows:

$$CMAR_{S,T,t} = \prod_{t=0}^{T}\left(1+\mathrm{Re}\,turn_{S,T,t}\right) - \prod_{t=0}^{T}\left(1+\mathrm{Re}\,turn_{Mkt,T,t}\right) \tag{1}$$

Where $\mathrm{Re}\,turn_{S,T,t}$ is the T-day cumulative returns on stock 'S' after the issuance of analysts' recommendation on day 't', and $\mathrm{Re}\,turn_{Mkt,T,t}$ is the T-day cumulative returns on country's market index 'Mkt' after the issuance of analysts' recommendation on day 't'.

We test whether, on average, foreign and local analysts' buy and sell recommended stocks produced CMAR different from zero for lead of 'T' days or not. 'T' is equal to 14, 28, 42, 56, and 112 days in our study. Table 5, Panel A1 through Panel D1, document CMAR for buy and sell recommended stocks in each country for different lead days. Our results show that, on average, foreign analysts' buy recommended stocks posted positive CMAR in all countries except Indonesia, where CMAR decreased from significant +2.1 basis points for lead of 14 days to significant -9.2 basis points for lead of 112 days over the period of our analysis. In contrast to foreign analysts, local analysts' buy recommended stocks produced negative CMAR in all countries. The worst performance for local analysts' buy recommended stocks was registered in Malaysia, where they significantly produced negative CMAR for all leads. In all countries, CMAR on local analysts' buy recommendations became more negative as the time increased. It suggests that local analysts were not able to uncover the persistent negative information that significantly affected those stocks that were

recommended by them as buy. For example, CMAR decreased from insignificant +0.7 basis points for lead of 14 days to significant -7.4 basis points for lead of 112 days in South Korea over the period of our analysis.

Our results also show that, foreign analysts' sell recommended stocks also posted negative CMAR in all countries except Thailand, where they produced significant positive CMAR. One the other hand, relative to their buy recommendations, local analysts' sell recommendations fared better by posting significantly negative CMAR in all countries. Further look into Table 5, Panel A1 through Panel D1, show that foreign analysts' sell recommended stocks produced higher CMAR than local analysts' sell recommended stocks.

Table 5, Panel A2 through Panel D2, documents whether the performance of foreign and local analysts' buy and sell recommended stocks were statistically different from each other. We use Welch's test to document whether CMAR for foreign and local analysts' recommended stocks are different from each other with in each category, i.e. buy and sell, for different lead days. Our results show that foreign analysts' buy recommended stocks perform better than local analysts' buy recommended stocks. In all countries, except Indonesia, foreign analysts' buy recommended stocks significantly produce higher CMAR than local analysts' buy recommended stocks. Foreign analysts' exhibited the strongest relative performance in South Korea, where they outperformed their local counterparts by as much as 8.9 basis points for the 112 day holding-period. On the other hand, local analysts' sell recommended stocks produce significantly more negative CMAR than foreign analysts' sell recommended stocks in all countries. For example, local analysts' sell recommendations outperformed foreign analysts' sell recommendations in South Korea for all leads. Their superior performance of local analysts' sell recommendations ranges from 6.0 basis points for a holding-period of 56 days to 9.4 basis points for a holding-period of 28 days.

We also compute the spread between CMAR following buy and sell recommendations within each group. Prior literature considers this as a measure of the overall value of analysts' recommendations (Jegadeesh and Kim, 2006). Our results show that if analysts are evaluated on a measure based on spread between analysts' buy and sell recommendations, misleading results might be obtained. For example, Table 5, Panel B2, shows that when evaluated on spread between CMAR following buy and sell recommendations, foreign analysts significantly outperform local

analysts in Malaysia for all leads. However, based on this result, a conclusion that foreign analysts were more informative in their recommendations than local analysts in Malaysia during financial crisis of 1997-98 is premature, because we have already shown that this was not the case as local analysts significantly outperformed foreign analysts in Malaysia in their sell recommendations. Had foreign analysts held complete advantage over local analysts, their buy as well as sell recommendations would have outperformed the recommendations by local analysts. Therefore, caution should be observed while interpreting results that combine buy and sell recommendations in their analysis on relative performance of foreign and local analysts.

[Insert Table 5 here]

5.2. Regression analysis of the performance of market-adjusted returns following foreign and local analysts' recommendations

The first step in measuring relative performance of foreign and local analysts is to determine whether foreign and local analysts' buy and sell recommendations produce systematically different returns from each other. In the previous section, we showed that foreign analysts' buy recommendations possess significantly more information than local analysts' buy recommendations and local analysts' sell recommendations contain significantly more information than foreign analysts' sell recommendations. However, we left out hold recommendations from our analysis in the previous section. Dropping out a significant amount of observations reduce the power of our tests. In order to overcome this concern, we incorporate hold recommendations in our analysis and document whether foreign analysts' buy recommendations still outperform local analysts' buy recommendations and local analysts' sell recommendations outperform foreign analysts sell recommendations.

In order to do so, we estimate regression on cumulative market-adjusted returns following analysts' recommendation with four dummy variables representing local analysts' buy recommendations, foreign analysts' buy recommendations, local analysts' sell recommendations, and foreign analysts' sell recommendations. If local analysts are more informative than foreign analysts, the coefficient estimate of dummy variable representing the local analysts' buy recommendations should be

significantly more than the coefficient estimate of dummy variable representing the foreign analysts' buy recommendations. While, the reverse should hold for dummy variable representing sell recommendations.

Our basic 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 follows:

$$
\begin{aligned}
CMAR_{S,T,t} = \alpha &+ \beta_1 \left(Buy\_Dum_{S,t} * Loc\_Dum_{S,t} \right) \\
&+ \beta_2 \left(Buy\_Dum_{S,t} * For\_Dum_{S,t} \right) + \beta_3 \left(Sell\_Dum_{S,t} * Loc\_Dum_{S,t} \right) \\
&+ \beta_4 \left(Sell\_Dum_{S,t} * For\_Dum_{S,t} \right) + \varepsilon_{S,T,t}
\end{aligned}
\tag{2}
$$

Where $Buy\_Dum_{S,t}$ is the dummy variable that is equal to 1 if the recommendation is a buy recommendation and 0 otherwise; $Sell\_Dum_{S,t}$ is the dummy variable that is equal to 1 if the recommendation is a sell recommendation and 0 otherwise; $Loc\_Dum_{S,t}$ is the dummy variable that is equal to 1 if the recommendation is issued by a local analyst and 0 otherwise; and $For\_Dum_{S,t}$ is the dummy variable that is equal to 1 if the recommendation is issued by a foreign analyst and 0 otherwise.

Our results in Table 6, Panel A1 through Panel D1, document the regression coefficients for foreign and local analysts buy and sell recommendations during the crisis period. The regression coefficients will show us how well foreign and local analysts' buy or sell recommendations did relative to all other recommendations. If buy recommendations were more informative relative to other recommendations, we should obtain significant positive coefficient for variables representing foreign and local analysts' buy recommendations. Similarly, for sell recommendations we expect to obtain significantly negative coefficients if sell recommendations are more informative relative to other recommendations. Our results show that foreign analysts' buy recommendations performed significantly better than the other recommendations in Malaysia and South Korea. For example, foreign analysts' buy recommendations post as high as 12.9 basis points relative to other recommendation in South Korea for the 112 days holding-period. In other two countries, i.e. Indonesia and Thailand, foreign analysts' buy recommendations failed to perform better than the other recommendations. On the other hand, our results show that local analysts' buy recommendations produced significantly lower returns relative to the other

recommendations in Thailand, indicating poor information content of their buy recommendations. In the rest of the countries, local analysts' buy recommendations did not produce returns that were significantly different from other recommendations. Our results show less than encouraging picture for foreign analysts' sell recommendations, as they did not produce significantly lower returns in any of the countries. It signifies that foreign analysts were not able to disclose any significant information in their sell recommendations. The results for local analysts' sell recommendations were, however, more encouraging. Table 6, Panel A1 through Panel D1, show that local analysts' sell recommendations produced significantly lower returns in Indonesia and South Korea. In other two countries, i.e. Malaysia and Thailand, local analysts' sell recommendations failed to perform better than the other recommendations.

The results presented so far in Table 6, Panel A1 through Panel D1, only show that foreign analysts' buy recommendations were informative relative to the other recommendations in Malaysia and South Korea, while local analysts' sell recommendations were superior in content relative to the other recommendations in Indonesia and South Korea during the financial crisis of 1997-98. Table 6, Panel A2 through Panel D2, use Wald's test to test whether foreign and local analysts' recommendations produced different returns relative to each other. The results in Table 6, Panel A2 through Panel D2, confirm our findings of Table 5 that foreign analysts' buy recommendations had a superior performance compared to local analysts' buy recommendations in Malaysia, Thailand, and South Korea, while there was no significant difference between their buy recommendations in Indonesia. However, even in Indonesia, Table 6, Panel A2, shows a positive sign for the difference between foreign and local analysts' buy recommendations indicating marginally better performance for foreign analysts' buy recommendations. Similarly, Table 6, Panel A2 through Panel D2, document that local analysts' sell recommendations performed better than foreign analysts' sell recommendations in all countries during the financial crisis of 1997-98.

Our results in Table 6, Panel A2 through Panel D2, confirm our previous finding of Table 5 that it is misleading to gauge relative performance foreign and local analysts by the spread between their buy and sell recommendations. Our results show that if analysts are evaluated on a measure based on the performance spread between analysts' buy and sell recommendations, misleading results might be obtained. For

example, Table 6, Panel A2, shows that when evaluated on spread between CMAR following analysts' buy and sell recommendations, local analysts significantly outperform foreign analysts in South Korea. However, this conclusion is misleading, since our results show that foreign analysts significantly outperformed local analysts in South Korea in their buy recommendations.

Our results reveal that there was no complete information advantage for foreign or local analysts in the crisis hit countries. An undisputable information advantage should lead to superior performance in buy as well as sell recommendations. Our results show that such a consistent superior performance cannot be attributed to foreign or local analysts.

[Insert Table 6 here]

5.3. Robustness of results

In this section, we investigate whether our results are robust to different alternative explanatory variables and time periods. We re-estimate Equation (2) in the presence of numerous control variables such as optimism, size, and analyst following. We will discuss optimism in detail, since we believe that it can explain asymmetric results that we obtained. In order to overcome the concerns that one part of the crisis might be driving our results, we re-estimate Equation (2) by dividing our sample period in two sub-periods. We will report the results for these robustness checks in the following sub-sections.

5.3.1. Relative performance of foreign and local analysts' recommendations and optimism in local analysts' recommendations

The results presented thus far suggest that arguments put forward in favor of local analyst advantage (and even those that represent foreign analyst advantage) do not hold during the crisis period. One of the reasons cited for this asymmetric result is that local analysts were overly optimistic in their recommendations (Lai and Teo, 2006). Lai and Teo (2006) argue that because local analysts were more eager to issue buy recommendations, local analysts' buy recommendations contain less positive information than foreign analysts' buy recommendations. They conclude that since

foreign analysts were more selective in picking their buy recommended firms foreign analysts' buy recommendations outperform local analysts' buy recommendations. Moreover, they suggest that due to local analysts' higher reluctance to issue sell recommendations as compared to foreign analysts, local analyst sell recommendations contain more negative information than foreign analyst sell recommendations. They believe that since local analysts were more selective in picking out sell candidates local analysts' sell recommendations outperform foreign analysts' sell recommendations. To the best of our knowledge, Lai and Teo (2006) is the only paper which reports the result similar to ours and gives an explanation for it.

Recognizing the importance of the results presented in Lai and Teo (2006), we add optimism, OPT, as a control variable in our initial regression equation. Following Lai and Teo (2006), we measure optimism variable as the difference between analysts' recommendation and last month consensus recommendation. Lai and Teo (2006) maintain that optimism is responsible for the results that we have obtained in the previous section, i.e. superior performance of local analysts' sell recommendations and foreign analysts' buy recommendations. Moreover, there may be concerns that differences in the firm specific characteristics of stocks recommended by foreign and local analysts may be driving the results obtained in Table 5 and Table 6. It is also possible that local analysts cover relatively smaller stocks than do foreign analysts and smaller stocks underperformed large stocks in the sample period. This may, therefore, be responsible for the inferior performance of local analysts' buy recommendations and superior performance of local analysts' sell recommendations. Similarly, it is also possible that foreign analysts cover stocks with less information asymmetry. To address these concerns, we re-estimate Equation (2) by adding control variables that capture sentiments in the stock market, the amount of public information, and interest or following that a firm might have. For example, the number of analyst following for a stock, $Analyst\_Foll$, was added to capture the amount of public information, while market value of a stock, Log_MV, was added to capture investors' interest in a particular stock. We added a dummy variable, $Trans\_Period$, to capture the initial panic in the stock markets. As Figure 1 shows stock markets in all countries suffered massive decline during 1997, while they settled down at a relatively stable lower level during 1998. The market index on the day of recommendation, Mkt_Ind, was added as a control variable to capture the

sentiments prevailing in the stock market at the time of issuance of recommendations. Specifically, we run the following regression:

$$CMAR_{S,T,t} = \alpha + \beta_1 \left(Buy\_Dum_{S,t} * Loc\_Dum_{S,t} \right) + \beta_2 \left(Buy\_Dum_{S,t} * For\_Dum_{S,t} \right)$$

$$+ \beta_3 \left(Sell\_Dum_{S,t} * Loc\_Dum_{S,t} \right) + \beta_4 \left(Sell\_Dum_{S,t} * For\_Dum_{S,t} \right)$$

$$+ \beta_5 \left(Analyst\_Foll_S \right) + \beta_6 \left(OPT_{S,t} \right) + \beta_7 \left(Log\_MV_{S,t} \right)$$

$$+ \beta_8 \left(Trans\_Period \right) + \beta_9 \left(Mkt\_Ind_t \right) + \varepsilon_{S,T,t} \qquad (3)$$

Our results in Table 7 show that the difference between foreign analysts' recommendations and local analysts' recommendations is persistent even after controlling for optimism and other related variables. Table 7, Panel A2 through Panel D2, reports that there is no appreciable change in the difference between foreign and local analysts' buy recommendations. Even after controlling for optimism, foreign analysts' buy recommendations outperform local analysts buy recommendations. In fact, our results for the difference between foreign and local analysts' buy recommendations become stronger in Thailand and remain qualitatively the same in other countries. Similarly, Table 7, Panel A2 through Panel D2, reports the same result for difference between foreign and local analysts' sell recommendations – there is no significant qualitative change in the difference between foreign and local analysts' sell recommendations. As was the case for buy recommendations, our results have become more pronounced in Malaysia and Thailand, while remaining qualitatively the same for other countries after the addition of control variables. The results of Table 7 indicate that, at least in our sample, optimism in local analysts' recommendations is not the reason for underperformance of local buy recommendations and underperformance of foreign sell recommendations.[17]

Consistent with the previous results, Table 7, Panel A2 through Panel D2, show that it is misleading to measure relative performance of foreign and local

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[17] Mindful of the effects that governance mechanisms may have on analysts' performance, we redo our analysis by controlling for several governance variables in Equation (3). Our results show that difference between foreign and local analysts' recommendations persist even after controlling for governance mechanisms. Interestingly, contrary to our expectations, our results show that the difference between foreign and local analysts' buy recommendations decrease, while the difference between foreign and local analysts' sell recommendations increase after controlling for governance mechanisms. Our results suggest that foreign analyst following is an important determinant of within the crisis firm performance. Firms that were recommended by foreign analysts lost relatively less of their value around the recommendation dates as compared to firms that were recommended by local analysts. Our results extend the findings of Mitton (2002), who shows that significantly better stock price performance during Asian financial crisis was associated with firms that had better governance characteristics by suggesting that foreign analysts' following may also be an important determinant of within the crisis firms' performance during Asian financial crisis .

analysts by the spread in performance between their buy and sell recommendations. Our results show that the spread between analysts' buy and sell recommendations may not be an ideal measure to gauge the relative performance of foreign and local analysts. A dominance of the performance of either the buy or the sell recommendations in the performance spread between analysts' buy and sell recommendations will result in the misleading impression that one of the groups is consistently better. Since, foreign and local analysts are subject to different job pressures, may obtain their information from different sources, process information in different environments, or serve completely different sets of customers, it is entirely possible that their buy and sell recommendations differ in quality. By analyzing their buy and sell recommendations separately, we can effectively get some indication about the existence of such differences.

[Insert Table 7 here]

5.3.2. Relative performance of foreign and local analysts' recommendations during the first and second part of Asian financial crisis

Figure 1 shows that there are two distinct parts of the crisis. In the first part that starts after the onset of crisis on July 2, 1997, the stock market indices of all the countries went into a free fall, while during the second part the stock market indices settled down at a relatively lower level after the start of 1998. In order to overcome the concerns that one part of the crisis might be driving our results, we divided our sample into two periods. The first period covers the most uncertain part of the crisis, i.e. July 2, 1997 to December 31, 1997 and the second period covers the period of relative stability, i.e. January 1, 1998 to August 31, 1998. We run regression of Equation (3) for both periods.[18]

Table 8, Panel A2 through Panel D2, and Table 9, Panel A2 through Panel D2, confirm our previous findings that foreign analysts' buy recommendations are indeed better than local analysts' buy recommendations, while local analysts' sell recommendations are better than foreign analysts' sell recommendations. Although, our results are much stronger in the first part of the crisis, Table 8 and Table 9 show

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[18] Since, first part of the crisis corresponds to Trans_Period = 1 and second part corresponds to Trans_Period = 0, so dummy variable, Trans_Period, will drop out in this analysis.

that there is no qualitative change in our results when moving from the first to the second sub-period of the crisis.

[Insert Table 8 here]

[Insert Table 9 here]

6. Conclusion

We examined the performance of foreign and local analysts' stock recommendations in Indonesia, Malaysia, Thailand, and South Korea during the financial crisis of 1997-98. Our results show quite resoundingly that theories put forward to explain foreign and local analyst advantage were not consistent with the data for this sample. We document that foreign analysts' buy recommendations outperform local analysts' buy recommendations, while local analysts' sell recommendation perform much better than foreign analysts' sell recommendations. These results are pervasive across countries and persist even after controlling for optimism, size, and analyst following.

An important implication of our result is that any study that evaluates performance of analysts based on either buy minus sell portfolio strategy or magnitude of difference between returns due to analysts' buy and sell recommendations may yield misleading results. A better performance in e.g. issued buy recommendations may well be counterbalanced by a worse performance in sell recommendations, and vice versa. A careful analysis thus requires a separate investigation of the performance for different types of recommendations.

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Table 1
Distribution of brokerage houses
The table shows the number of foreign and local brokerage houses that issued at least one recommendation in Indonesia, Malaysia, Thailand, and South Korea from July 2, 1997 to August 31, 1998. Foreign brokerage houses are those with head-offices outside Asia and having no physical presence in country whose firms they are covering. Local brokerage houses are those that have their head-office in Asia and have presence in the country under discussion.

Country	Foreign Brokerage Houses	Local Brokerage Houses	Foreign Brokerage Houses / Local Brokerage Houses
Indonesia	15	5	3.00
Malaysia	18	18	1.00
Thailand	15	3	5.00
South Korea	13	4	3.25

Table 2
Basic descriptive statistics
This table presents the descriptive statistics for our sample. The sample includes all firms in Indonesia, Malaysia, Thailand, and South Korea that have at least one recommendation issued by local or foreign analysts. The columns present number of firms covered, number of recommendations issued, average number of recommendations per firm, and average market capitalization on the day of recommendation. The sample period is from July 2, 1997 to August 31, 1998.

Country	Number of Firms Covered		Number of Recommendations		Recommendations Per Firm		Average Market Capitalization on Recommendation Date (Local Currency)	
	Foreign	Local	Foreign	Local	Foreign	Local	Foreign	Local
Indonesia	89	89	749	266	8.41	2.99	2978013.00	1664917.00
Malaysia	177	255	1282	2778	7.24	10.89	4078.35	2879.83
Thailand	120	93	888	280	7.40	3.01	23496.94	20124.78
South Korea	159	567	529	1486	3.32	2.62	1114420.00	261600.10

Table 3
Industries followed by foreign and local analysts
This table presents the descriptive statistics for the type of firms covered in our sample by local and foreign analysts in each country. The sample includes all firms in Indonesia, Malaysia, Thailand, and South Korea that have at least one recommendation issued by local or foreign analysts. The sample period is from July 2, 1997 to August 31, 1998.

ICB Industrial Segments	Indonesia		Malaysia		Thailand		South Korea	
	Foreign	Local	Foreign	Local	Foreign	Local	Foreign	Local
Oil and Gas	0.1%	0.4%	0.5%	0.8%	3.4%	3.6%	3.4%	1.0%
Basic Materials	12.4%	12.0%	3.6%	4.4%	7.4%	7.5%	10.8%	16.2%
Industrial	14.8%	16.2%	22.3%	25.9%	21.8%	15.7%	18.5%	25.0%
Consumer Goods	22.4%	19.9%	17.0%	17.0%	10.0%	10.0%	9.8%	19.5%
Healthcare	6.5%	3.8%	0.0%	0.1%	0.3%	0.0%	0.4%	4.9%
Consumer Services	11.6%	12.0%	17.2%	14.2%	10.5%	7.1%	4.0%	1.8%
Telecommunications	5.6%	5.3%	2.2%	1.3%	15.7%	12.5%	1.1%	0.8%
Utilities	0.0%	0.0%	9.7%	5.9%	3.5%	2.9%	7.8%	2.4%
Financials	23.6%	27.1%	18.8%	21.2%	20.3%	31.4%	7.9%	5.5%
Technology	0.0%	0.0%	1.2%	1.4%	4.6%	4.6%	8.7%	5.7%

Table 4
Type of recommendations issued by foreign and local analysts
This table presents basic descriptive statistics for the type of recommendations issued in Indonesia, Malaysia, Thailand, and South Korea. The sample period is from July 2, 1997 to August 31, 1998. Panel A documents number of each type of recommendations issued, while Panel B reports what percentage of particular type of recommendation is issued by each group. 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 Recommendation

Country	Buy		Hold		Sell	
	Foreign	Local	Foreign	Local	Foreign	Local
Indonesia	245	76	223	72	281	118
Malaysia	319	1104	463	807	500	867
Thailand	293	89	229	75	366	116
South Korea	170	290	167	562	192	634

Panel B: Percentage of Each Type of Recommendation

Country	Buy		Hold		Sell	
	Foreign	Local	Foreign	Local	Foreign	Local
Indonesia	32.70%	27.10%	29.80%	28.60%	37.50%	44.40%
Malaysia	24.90%	39.70%	36.10%	29.00%	39.00%	31.20%
Thailand	33.00%	31.80%	25.80%	26.80%	41.20%	41.40%
South Korea	32.10%	19.50%	31.60%	37.80%	36.30%	42.70%

Table 5
Cumulative market-adjusted returns following foreign and local analyst recommendation
This table presents the cumulative market-adjusted returns following foreign and local analysts' recommendation. 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". The market-adjusted returns are calculated by using Equation (1). The sample period is from July 2, 1997 to August 31, 1998. Panel As represents average CMAR following foreign and local analysts' buy and sell recommendations. Panel Bs document the difference between average CMAR following foreign and local analysts' buy and sell recommendations using Welch's test. 1% significance is denoted by ***, 5% by ** and 10% by *.

Panel A1: Indonesia – Average returns

	Buy Recommendations		Sell Recommendations	
Lead Days	Local	Foreign	Local	Foreign
First 14 Days	0.006	0.021**	-0.058***	-0.007
First 28 Days	-0.009	-0.011	-0.077***	-0.013
First 42 Days	-0.038*	-0.004	-0.110***	-0.048***
First 56 Days	-0.036	-0.036**	-0.127***	-0.060***
First 112 Days	-0.124***	-0.092***	-0.121***	-0.192***

Panel A2: Indonesia – Difference between average returns

Lead Days	Foreign Buy – Local Buy	Foreign Sell – Local Sell	Foreign Buy – Foreign Sell	Local Buy – Local Sell
First 14 Days	0.015	0.051***	0.029**	0.035***
First 28 Days	-0.001	0.063**	0.002	0.068***
First 42 Days	0.033	0.061**	0.044*	0.072**
First 56 Days	0.000	0.067**	0.024	0.091**
First 112 Days	0.032	-0.070*	0.100***	-0.002

Panel B1: Malaysia – Average returns

	Buy Recommendations		Sell Recommendations	
Lead Days	Local	Foreign	Local	Foreign
First 14 Days	-0.007**	0.022***	-0.018***	-0.003
First 28 Days	-0.013***	0.034***	-0.022***	0.014
First 42 Days	-0.017***	0.031***	-0.030***	0.000
First 56 Days	-0.021***	0.024**	-0.032***	-0.011
First 112 Days	-0.015**	0.010	-0.036***	-0.029**

Panel B2: Malaysia – Difference between average returns

Lead Days	Foreign Buy – Local Buy	Foreign Sell – Local Sell	Foreign Buy – Foreign Sell	Local Buy – Local Sell
First 14 Days	0.029***	0.015**	0.025***	0.011***
First 28 Days	0.047***	0.036***	0.020	0.009
First 42 Days	0.048***	0.031**	0.030*	0.013*
First 56 Days	0.045***	0.021*	0.035**	0.011
First 112 Days	0.026*	0.006	0.040**	0.020*

Panel C1: Thailand – Average returns

Lead Days	Buy Recommendations		Sell Recommendations	
	Local	Foreign	Local	Foreign
First 14 Days	-0.004	0.008	-0.021*	0.010
First 28 Days	-0.014	0.017*	-0.032*	0.041***
First 42 Days	-0.036	0.038**	-0.025	0.025*
First 56 Days	-0.050*	0.037**	-0.017	0.041**
First 112 Days	-0.049	0.013	0.100**	0.028

Panel C2: Thailand – Difference between average returns

Lead Days	Foreign Buy – Local Buy	Foreign Sell – Local Sell	Foreign Buy – Foreign Sell	Local Buy – Local Sell
First 14 Days	0.012	0.031**	-0.002	0.017
First 28 Days	0.031	0.074***	-0.024	0.018
First 42 Days	0.075**	0.051*	0.012	-0.011
First 56 Days	0.088***	0.059*	-0.003	-0.033
First 112 Days	0.063*	-0.072	-0.014	-0.150***

Panel D1: South Korea – Average returns

Lead Days	Buy Recommendations		Sell Recommendations	
	Local	Foreign	Local	Foreign
First 14 Days	0.007	0.011	-0.058***	0.007
First 28 Days	-0.002	0.009	-0.094***	-0.000
First 42 Days	-0.037***	0.011	-0.107***	-0.024
First 56 Days	-0.038***	0.042**	-0.101***	-0.041**
First 112 Days	-0.074***	-0.014	0.141***	-0.055**

Panel D2: South Korea – Difference between average returns

Lead Days	Foreign Buy – Local Buy	Foreign Sell – Local Sell	Foreign Buy – Foreign Sell	Local Buy – Local Sell
First 14 Days	0.004	0.065***	-0.009	0.065***
First 28 Days	0.011	0.094***	0.009	0.092***
First 42 Days	0.049***	0.083***	0.036*	0.069***
First 56 Days	0.081***	0.060***	0.084***	0.063***
First 112 Days	0.089***	0.086***	0.069**	0.066***

Table 6
Performance of cumulative market-adjusted returns following analysts' recommendations (without control variables)
This table presents betas for the regression of CMAR on foreign and local analysts buy and sell recommendations as indicated in Equation (2). 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". The sample period is from July 2, 1997 to August 31, 1998. Panel As document coefficients on analysts' buy and sell recommendations. Panel Bs document the difference between the coefficients using Wald's test. 1% significance is denoted by ***, 5% by ** and 10% by * in Panel A, while the differences that are significant at least at 10% are shown by bold in Panel B.

Panel A1: Indonesia – Coefficients on regression variables

Lead Days	Local Buy	Local Sell	Foreign Buy	Foreign Sell	Constant	Adjusted R^2
First 14 Days	0.004	-0.062***	0.020	-0.009	0.001	0.009
First 28 Days	0.002	-0.069***	-0.000	-0.003	-0.011	0.002
First 42 Days	-0.005	-0.085**	0.028	-0.016	-0.032*	0.006
First 56 Days	-0.011	-0.113***	-0.011	-0.037	-0.024	0.005
First 112 Days	-0.008	-0.016	0.022	-0.079**	-0.115***	0.004

Panel A2: Indonesia – Difference between coefficients

Lead Days	Foreign Buy – Local Buy		Foreign Sell – Local Sell		Foreign Buy – Foreign Sell		Local Buy – Local Sell	
	Value	F-value	Value	F-value	Value	F-value	Value	F-value
First 14 Days	0.016	0.70	**0.053**	**5.55**	0.029	2.52	**0.066**	**9.27**
First 28 Days	-0.002	0.01	**0.066**	**4.47**	0.003	0.01	**0.071**	**4.92**
First 42 Days	0.033	0.91	**0.069**	**3.77**	0.044	2.42	**0.080**	**3.77**
First 56 Days	0.000	0.00	**0.076**	**3.55**	0.026	0.59	**0.102**	**5.19**
First 112 Days	0.030	0.29	-0.063	1.49	**0.101**	**6.78**	0.008	0.01

Panel B1: Malaysia – Coefficients on regression variables

Lead Days	Local Buy	Local Sell	Foreign Buy	Foreign Sell	Constant	Adjusted R^2
First 14 Days	0.007	-0.003	0.037***	0.011	-0.015***	0.006
First 28 Days	0.002	-0.007	0.051***	0.031**	-0.016***	0.006
First 42 Days	0.001	-0.013	0.050***	0.019	-0.018***	0.004
First 56 Days	0.000	-0.013	0.046***	0.011	-0.022***	0.002
First 112 Days	0.003	-0.018	0.033*	-0.008	0.022***	0.001

Panel B2: Malaysia – Difference between coefficients

Lead Days	Foreign Buy – Local Buy		Foreign Sell – Local Sell		Foreign Buy – Foreign Sell		Local Buy – Local Sell	
	Value	F-value	Value	F-value	Value	F-value	Value	F-value
First 14 Days	**0.030**	**11.92**	**0.014**	**4.08**	**0.026**	**6.73**	**0.010**	**3.95**
First 28 Days	**0.049**	**12.27**	**0.038**	**6.83**	0.020	1.26	0.009	1.34
First 42 Days	**0.049**	**9.82**	**0.032**	**3.93**	0.031	2.30	0.014	2.20
First 56 Days	**0.046**	**7.96**	0.024	2.08	**0.035**	**2.81**	0.013	1.72
First 112 Days	**0.030**	**2.66**	0.010	0.24	**0.041**	**3.57**	0.021	2.24

Panel C1: Thailand – Coefficients on regression variables

Lead Days	Local Buy	Local Sell	Foreign Buy	Foreign Sell	Constant	Adjusted R^2
First 14 Days	-0.009	-0.028	0.002	0.004	0.005	-0.001
First 28 Days	-0.056	-0.071**	-0.026	-0.001	0.042*	0.002
First 42 Days	-0.068*	-0.057	0.009	-0.004	0.028	0.001
First 56 Days	-0.085**	-0.048	-0.001	0.006	0.034	0.001
First 112 Days	-0.115**	0.030	-0.048	-0.039	0.065*	0.002

Panel C2: Thailand – Difference between coefficients

Lead Days	Foreign Buy – Local Buy		Foreign Sell – Local Sell		Foreign Buy – Foreign Sell		Local Buy – Local Sell	
	Value	F-value	Value	F-value	Value	F-value	Value	F-value
First 14 Days	0.011	0.36	**0.032**	**2.81**	-0.002	0.03	0.019	0.58
First 28 Days	0.030	0.93	**0.070**	**5.51**	-0.025	1.15	0.015	0.18
First 42 Days	**0.077**	**4.43**	0.053	2.22	0.013	0.25	-0.011	0.07
First 56 Days	**0.084**	**4.46**	0.054	1.90	-0.007	0.07	-0.037	0.58
First 112 Days	0.067	1.93	-0.069	1.26	-0.009	0.07	**-0.145**	**4.32**

Panel D1: South Korea – Coefficients on regression variables

Lead Days	Local Buy	Local Sell	Foreign Buy	Foreign Sell	Constant	Adjusted R^2
First 14 Days	0.014	-0.051***	0.018	0.013	-0.006	0.038
First 28 Days	-0.005	-0.097***	0.006	-0.002	0.002	0.051
First 42 Days	0.010	-0.058***	0.060***	0.024	-0.048***	0.024
First 56 Days	0.005	-0.057***	0.086***	0.002	-0.043***	0.018
First 112 Days	0.038	-0.026	0.129***	0.060*	-0.115***	0.013

Panel D2: South Korea – Difference between coefficients

Lead Days	Foreign Buy – Local Buy		Foreign Sell – Local Sell		Foreign Buy – Foreign Sell		Local Buy – Local Sell	
	Value	F-value	Value	F-value	Value	F-value	Value	F-value
First 14 Days	0.004	0.12	**0.064**	**22.43**	0.005	0.08	**0.065**	**46.76**
First 28 Days	0.011	0.50	**0.095**	**28.85**	0.008	0.18	**0.092**	**50.78**
First 42 Days	**0.050**	**5.76**	**0.082**	**11.17**	0.036	1.61	**0.068**	**20.39**
First 56 Days	**0.081**	**10.77**	**0.059**	**4.57**	**0.084**	**6.72**	**0.062**	**11.00**
First 112 Days	**0.091**	**8.44**	**0.086**	**5.66**	**0.069**	**3.18**	**0.064**	**5.27**

Table 7
Performance of market-adjusted returns following analysts' recommendations (with control variables)
This table presents betas for the regression of CMAR on foreign and local analysts buy and sell recommendations as indicated in Equation (3). 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". The sample period is from July 2, 1997 to August 31, 1998. Panel As document coefficients on analysts' buy and sell recommendations. Panel Bs document the difference between the coefficients using Wald's test. 1% significance is denoted by ***, 5% by ** and 10% by * in Panel A, while the differences that are significant at least at 10% are shown by bold in Panel B.

Panel A1: Indonesia – Coefficients on regression variables

Lead Days	Local Buy	Local Sell	Foreign Buy	Foreign Sell	Constant	Adjusted R^2
First 14 Days	-0.004	-0.069**	0.017	-0.004	0.018	0.049
First 28 Days	0.016	-0.104***	0.021	-0.021	-0.050	0.056
First 42 Days	0.002	-0.125***	0.050	-0.031	-0.063	0.078
First 56 Days	0.002	-0.161***	0.020	-0.058	0.170	0.071
First 112 Days	-0.056	0.000	-0.003	-0.038	0.121	0.115

Panel A2: Indonesia – Difference between coefficients

Lead Days	Foreign Buy – Local Buy		Foreign Sell – Local Sell		Foreign Buy – Foreign Sell		Local Buy – Local Sell	
	Value	F-value	Value	F-value	Value	F-value	Value	F-value
First 14 Days	0.021	1.32	**0.065**	**7.70**	0.021	0.40	0.065	2.53
First 28 Days	0.005	0.03	**0.083**	**6.79**	0.042	0.94	**0.120**	**4.77**
First 42 Days	0.048	1.67	**0.094**	**7.07**	**0.081**	**2.98**	**0.127**	**4.44**
First 56 Days	0.018	0.20	**0.103**	**6.56**	0.078	1.90	**0.163**	**5.82**
First 112 Days	0.053	1.01	-0.038	0.57	0.035	0.28	-0.056	0.45

Panel B1: Malaysia – Coefficients on regression variables

Lead Days	Local Buy	Local Sell	Foreign Buy	Foreign Sell	Constant	Adjusted R^2
First 14 Days	0.008	-0.009	0.034***	0.010	-0.035	0.030
First 28 Days	0.003	-0.016	0.048***	0.033*	0.044	0.043
First 42 Days	-0.001	-0.019	0.037**	0.026	0.031	0.052
First 56 Days	-0.011	-0.006	0.021	0.035*	0.084**	0.053
First 112 Days	-0.029**	0.015	-0.020	0.056***	0.271***	0.097

Panel B2: Malaysia – Difference between coefficients

Lead Days	Foreign Buy – Local Buy		Foreign Sell – Local Sell		Foreign Buy – Foreign Sell		Local Buy – Local Sell	
	Value	F-value	Value	F-value	Value	F-value	Value	F-value
First 14 Days	**0.026**	**9.04**	**0.019**	**6.56**	0.024	2.94	**0.017**	**3.68**
First 28 Days	**0.045**	**10.05**	**0.049**	**10.85**	0.015	0.32	0.019	1.42
First 42 Days	**0.038**	**6.34**	**0.045**	**7.33**	0.011	0.16	0.018	0.99
First 56 Days	**0.032**	**4.11**	**0.041**	**5.84**	-0.014	0.21	-0.005	0.06
First 112 Days	0.009	0.24	**0.041**	**4.91**	**-0.076**	**5.37**	**-0.044**	**4.04**

Panel C1: Thailand – Coefficients on regression variables

Lead Days	Local Buy	Local Sell	Foreign Buy	Foreign Sell	Constant	Adjusted R^2
First 14 Days	-0.018	-0.033	0.001	-0.001	-0.002	0.031
First 28 Days	-0.066*	-0.102***	-0.012	-0.025	0.269***	0.053
First 42 Days	-0.067	-0.089**	0.036	-0.032	0.262**	0.031
First 56 Days	-0.079*	-0.090*	0.034	-0.026	0.345***	0.034
First 112 Days	-0.114**	-0.013	-0.010	-0.060	0.760***	0.051

Panel C2: Thailand – Coefficients between coefficients

Lead Days	Foreign Buy – Local Buy		Foreign Sell – Local Sell		Foreign Buy – Foreign Sell		Local Buy – Local Sell	
	Value	F-value	Value	F-value	Value	F-value	Value	F-value
First 14 Days	0.019	0.89	**0.032**	**2.75**	0.002	0.01	0.015	0.23
First 28 Days	**0.054**	**2.76**	**0.077**	**6.25**	0.013	0.10	0.036	0.66
First 42 Days	**0.103**	**7.05**	0.057	2.39	0.068	1.78	0.022	0.17
First 56 Days	**0.113**	**7.69**	0.064	2.42	0.060	1.26	0.011	0.03
First 112 Days	**0.104**	**4.45**	-0.047	0.65	0.050	0.55	-0.101	1.56

Panel D1: South Korea – Coefficients on regression variables

Lead Days	Local Buy	Local Sell	Foreign Buy	Foreign Sell	Constant	Adjusted R^2
First 14 Days	0.028***	-0.067***	0.034***	0.000	0.007	0.043
First 28 Days	0.010	-0.117***	0.025	-0.015	0.077	0.057
First 42 Days	0.033**	-0.082***	0.069***	-0.003	0.061	0.102
First 56 Days	0.040**	-0.097***	0.103***	-0.037	0.094	0.133
First 112 Days	0.060**	-0.043*	0.121***	0.026	-0.119	0.099

Panel D2: South Korea – Difference between coefficients

Lead Days	Foreign Buy – Local Buy		Foreign Sell – Local Sell		Foreign Buy – Foreign Sell		Local Buy – Local Sell	
	Value	F-value	Value	F-value	Value	F-value	Value	F-value
First 14 Days	0.006	0.19	**0.067**	**21.25**	0.034	2.49	**0.095**	**31.36**
First 28 Days	0.015	0.80	**0.102**	**29.61**	0.040	2.16	**0.127**	**30.28**
First 42 Days	**0.036**	**2.94**	0.079	9.65	0.072	4.21	0.115	21.12
First 56 Days	**0.063**	**5.70**	0.060	4.34	0.140	10.62	0.137	23.62
First 112 Days	**0.061**	**3.37**	0.069	3.43	0.095	3.18	0.103	6.88

Table 8
Performance of market-adjusted returns following analysts' recommendations (first part of crisis)
This table presents betas for the regression of CMAR on foreign and local analysts buy and sell recommendations as indicated in Equation (3) during the first part of crisis. The first part of crisis spans from July 2, 1997 to December 31, 1997. 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". Panel As document coefficients on analysts' buy and sell recommendations. Panel Bs document the difference between the coefficients using Wald's test. 1% significance is denoted by ***, 5% by ** and 10% by * in Panel A, while the differences that are significant at least at 10% are shown by bold in Panel B.

Panel A1: Indonesia – Coefficients on regression variables

Lead Days	Local Buy	Local Sell	Foreign Buy	Foreign Sell	Constant	Adjusted R^2
First 14 Days	0.010	-0.037	0.000	-0.018	-0.161	0.019
First 28 Days	-0.023	-0.062	-0.046	0.008	-0.634***	0.080
First 42 Days	-0.055	-0.087	-0.036	-0.004	-0.942***	0.119
First 56 Days	-0.081*	-0.126*	-0.080**	-0.015	-0.738***	0.078
First 112 Days	-0.175**	0.051	-0.061	-0.027	-1.145***	0.077

Panel A2: Indonesia – Difference between coefficients

Lead Days	Foreign Buy – Local Buy		Foreign Sell – Local Sell		Foreign Buy – Foreign Sell		Local Buy – Local Sell	
	Value	F-value	Value	F-value	Value	F-value	Value	F-value
First 14 Days	-0.010	0.17	0.019	0.29	0.018	0.32	0.047	1.05
First 28 Days	-0.023	0.44	**0.070**	**3.71**	-0.054	2.12	0.039	0.51
First 42 Days	0.019	0.21	**0.083**	**2.70**	-0.032	0.47	0.032	0.19
First 56 Days	0.001	0.00	**0.111**	**3.95**	-0.065	1.30	0.045	0.30
First 112 Days	**0.114**	**2.64**	-0.078	0.90	-0.034	0.17	-0.226	**3.67**

Panel B1: Malaysia – Coefficients on regression variables

Lead Days	Local Buy	Local Sell	Foreign Buy	Foreign Sell	Constant	Adjusted R^2
First 14 Days	0.010	-0.003	0.045***	0.007	-0.219***	0.069
First 28 Days	-0.010	0.001	0.031**	0.025**	-0.404***	0.120
First 42 Days	-0.014	-0.000	0.023	0.031*	-0.509***	0.116
First 56 Days	-0.035**	0.029**	0.004	0.059***	-0.442***	0.078
First 112 Days	-0.041**	0.037**	0.018	0.085***	-0.385***	0.113

Panel B2: Malaysia – Difference between coefficients

Lead Days	Foreign Buy – Local Buy		Foreign Sell – Local Sell		Foreign Buy – Foreign Sell		Local Buy – Local Sell	
	Value	F-value	Value	F-value	Value	F-value	Value	F-value
First 14 Days	**0.035**	**14.31**	0.010	1.57	**0.038**	**5.85**	0.013	1.38
First 28 Days	**0.041**	**11.74**	**0.024**	**4.17**	0.006	0.08	-0.011	0.61
First 42 Days	**0.037**	**6.29**	**0.031**	**4.09**	-0.008	0.09	-0.014	0.57
First 56 Days	**0.039**	**4.89**	0.030	2.33	**-0.055**	**3.04**	**-0.064**	**8.58**
First 112 Days	**0.059**	**7.00**	**0.048**	**4.44**	**-0.067**	**3.02**	**-0.078**	**8.78**

Panel C1: Thailand – Coefficients on regression variables

Lead Days	Local Buy	Local Sell	Foreign Buy	Foreign Sell	Constant	Adjusted R^2
First 14 Days	-0.024	-0.008	0.015	0.024	-0.245***	0.072
First 28 Days	0.006	-0.027	0.028	-0.003	-0.335***	0.059
First 42 Days	0.023	-0.003	0.079*	-0.046	-0.206	0.008
First 56 Days	0.020	-0.028	0.100**	-0.051	-0.149	0.002
First 112 Days	0.104	0.061	0.152***	-0.111	0.479**	0.035

Panel C2: Thailand – Coefficients between coefficients

Lead Days	Foreign Buy – Local Buy		Foreign Sell – Local Sell		Foreign Buy – Foreign Sell		Local Buy – Local Sell	
	Value	F-value	Value	F-value	Value	F-value	Value	F-value
First 14 Days	0.039	0.93	0.032	1.50	-0.009	0.12	-0.016	0.10
First 28 Days	0.022	0.16	0.024	0.47	0.031	0.57	0.033	0.28
First 42 Days	0.056	0.34	-0.043	0.72	**0.125**	**3.98**	0.026	0.09
First 56 Days	0.080	0.54	-0.023	0.11	**0.151**	**4.79**	0.048	0.17
First 112 Days	0.048	0.20	-0.172	2.16	**0.263**	**7.00**	0.043	0.07

Panel D1: South Korea – Coefficients on regression variables

Lead Days	Local Buy	Local Sell	Foreign Buy	Foreign Sell	Constant	Adjusted R^2
First 14 Days	0.016	-0.092***	0.036	0.010	-0.123	0.104
First 28 Days	0.007	-0.107***	0.046	0.001	-0.209*	0.105
First 42 Days	0.035	-0.086***	0.133***	0.029	-0.544***	0.125
First 56 Days	0.054*	-0.085***	0.244***	0.048	-0.909***	0.207
First 112 Days	0.116***	-0.120**	0.304***	0.035	-1.515***	0.188

Panel D2: South Korea – Difference between coefficients

Lead Days	Foreign Buy – Local Buy		Foreign Sell – Local Sell		Foreign Buy – Foreign Sell		Local Buy – Local Sell	
	Value	F-value	Value	F-value	Value	F-value	Value	F-value
First 14 Days	0.020	1.36	**0.102**	**14.08**	0.026	0.61	**0.108**	**14.78**
First 28 Days	0.039	1.55	**0.108**	**9.06**	0.045	0.82	**0.114**	**7.48**
First 42 Days	**0.098**	**7.29**	0.115	5.80	0.104	2.39	**0.121**	**7.74**
First 56 Days	**0.190**	**15.39**	0.133	6.48	0.196	5.48	**0.139**	**7.66**
First 112 Days	**0.188**	**9.02**	0.155	6.54	0.269	8.25	**0.236**	**10.23**

Table 9
Performance of market-adjusted returns following analysts' recommendations (second part of crisis)
This table presents betas for the regression of CMAR on foreign and local analysts buy and sell recommendations as indicated in Equation (3) during the first part of crisis. The second part of crisis spans from January1, 1998 to August 31, 1998. 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". Panel As document coefficients on analysts' buy and sell recommendations. Panel Bs document the difference between the coefficients using Wald's test. 1% significance is denoted by ***, 5% by ** and 10% by * in Panel A, while the differences that are significant at least at 10% are shown by bold in Panel B.

Panel A1: Indonesia – Coefficients on Regression Variables

Lead Days	Local Buy	Local Sell	Foreign Buy	Foreign Sell	Constant	Adjusted R^2
First 14 Days	0.000	-0.094*	0.038	0.007	-0.052	0.072
First 28 Days	0.080	-0.164***	0.102**	-0.074	0.417	0.047
First 42 Days	0.067	-0.180**	0.145***	-0.073	0.826***	0.069
First 56 Days	0.107*	-0.234***	0.125**	-0.134*	1.047***	0.071
First 112 Days	0.010	-0.035	0.060	-0.042	1.580***	0.118

Panel A2: Indonesia – Difference between Coefficients

	Foreign Buy – Local Buy		Foreign Sell – Local Sell		Foreign Buy – Foreign Sell		Local Buy – Local Sell	
Lead Days	Value	F-value	Value	F-value	Value	F-value	Value	F-value
First 14 Days	0.038	1.52	**0.101**	**9.65**	0.031	0.20	0.094	1.73
First 28 Days	0.022	0.26	**0.090**	**3.51**	**0.176**	**4.03**	**0.244**	**6.49**
First 42 Days	0.078	1.79	**0.107**	**5.05**	**0.218**	**6.27**	**0.247**	**6.53**
First 56 Days	0.018	0.11	**0.100**	**3.20**	**0.259**	**5.94**	**0.341**	**8.85**
First 112 Days	0.050	0.45	-0.007	0.01	0.102	1.02	0.045	0.13

Panel B1: Malaysia – Coefficients on Regression Variables

Lead Days	Local Buy	Local Sell	Foreign Buy	Foreign Sell	Constant	Adjusted R^2
First 14 Days	0.009	-0.010	0.027*	0.021	0.084***	0.015
First 28 Days	0.022	-0.015	0.065***	0.065*	0.377***	0.060
First 42 Days	0.017	-0.021	0.054*	0.040	0.425***	0.059
First 56 Days	0.018	-0.026**	0.041	0.032	0.470***	0.066
First 112 Days	-0.006	0.013	-0.048	0.055	0.777***	0.126

Panel B2: Malaysia – Difference between Coefficients

	Foreign Buy – Local Buy		Foreign Sell – Local Sell		Foreign Buy – Foreign Sell		Local Buy – Local Sell	
Lead Days	Value	F-value	Value	F-value	Value	F-value	Value	F-value
First 14 Days	0.018	1.61	**0.031**	**5.90**	0.006	0.07	0.019	2.04
First 28 Days	**0.043**	**3.25**	**0.080**	**7.57**	0.000	0.00	0.037	1.84
First 42 Days	0.037	2.02	**0.061**	**3.73**	0.014	0.07	0.038	1.69
First 56 Days	0.023	0.76	**0.058**	**3.60**	0.009	0.03	0.044	2.35
First 112 Days	-0.042	2.27	0.042	2.25	**-0.103**	**4.56**	-0.019	0.37

Panel C1: Thailand – Coefficients on Regression Variables

Lead Days	Local Buy	Local Sell	Foreign Buy	Foreign Sell	Constant	Adjusted R^2
First 14 Days	-0.005	-0.044	-0.005	-0.020	0.101	0.039
First 28 Days	-0.066	-0.126**	-0.033	-0.041	0.554***	0.080
First 42 Days	-0.075	-0.124*	0.010	-0.026	0.483***	0.051
First 56 Days	-0.092*	-0.113*	-0.003	-0.012	0.610***	0.068
First 112 Days	-0.204***	-0.055	-0.116*	-0.034	0.943***	0.083

Panel C2: Thailand – Coefficients between Coefficients

Lead Days	Foreign Buy – Local Buy		Foreign Sell – Local Sell		Foreign Buy – Foreign Sell		Local Buy – Local Sell	
	Value	F-value	Value	F-value	Value	F-value	Value	F-value
First 14 Days	0.000	0.00	0.024	0.85	0.015	0.19	0.039	1.05
First 28 Days	0.033	0.68	**0.085**	**4.00**	0.008	0.01	0.060	0.85
First 42 Days	**0.085**	**3.81**	**0.098**	**3.87**	0.036	0.21	0.049	0.46
First 56 Days	**0.089**	**3.96**	**0.101**	**3.92**	0.009	0.01	0.021	0.07
First 112 Days	0.088	2.46	0.021	0.10	-0.082	0.78	-0.149	2.37

Panel D1: South Korea – Coefficients on Regression Variables

Lead Days	Local Buy	Local Sell	Foreign Buy	Foreign Sell	Constant	Adjusted R^2
First 14 Days	0.024	-0.056***	0.039**	0.001	0.051	0.040
First 28 Days	-0.007	-0.123***	0.028	-0.010	0.193***	0.084
First 42 Days	0.012	-0.081***	0.036	-0.004	0.195**	0.040
First 56 Days	0.003	-0.103***	0.016	-0.062*	0.298***	0.026
First 112 Days	-0.001	-0.016	0.006	0.046	0.157	0.010

Panel D2: South Korea – Difference between Coefficients

Lead Days	Foreign Buy – Local Buy		Foreign Sell – Local Sell		Foreign Buy – Foreign Sell		Local Buy – Local Sell	
	Value	F-value	Value	F-value	Value	F-value	Value	F-value
First 14 Days	0.015	0.62	**0.057**	**12.69**	0.038	1.94	**0.080**	**14.41**
First 28 Days	**0.035**	**2.67**	**0.113**	**29.05**	0.038	1.28	**0.116**	**18.23**
First 42 Days	0.024	0.90	**0.077**	**10.16**	0.040	1.09	**0.093**	**9.06**
First 56 Days	0.013	0.19	0.041	2.15	**0.078**	**3.15**	**0.106**	**10.18**
First 112 Days	0.007	0.04	0.062	1.84	-0.040	0.45	0.015	0.11

Figure I: Market Indices
The figure shows market indices of Indonesia, Malaysia, Thailand, and South Korea between July 2, 1997 and December 31, 1999. Market Indices of all countries fell sharply at the onset of the crisis, but settled down at a lower level after that start of 1998. All market indexes began their sustained upward movement after August 31, 1998.
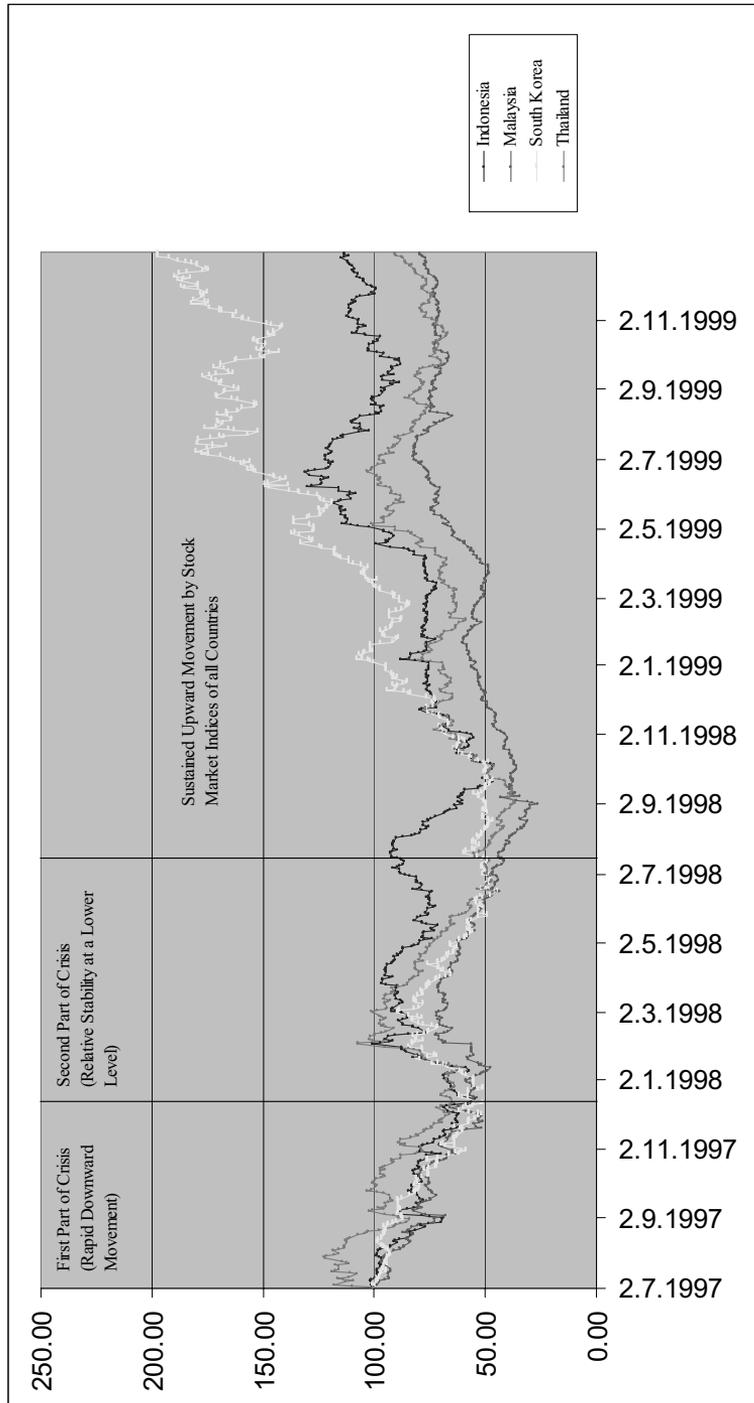
First Part of Crisis (Rapid Downward Movement)

Second Part of Crisis (Relative Stability at a Lower Level)

Sustained Upward Movement by Stock Market Indices of all Countries

Indonesia
Malaysia
South Korea
Thailand

250.00
200.00
150.00
100.00
50.00
0.00

2.7.1997
2.9.1997
2.11.1997
2.1.1998
2.3.1998
2.5.1998
2.7.1998
2.9.1998
2.11.1998
2.1.1999
2.3.1999
2.5.1999
2.7.1999
2.9.1999
2.11.1999

Did governance reforms have had any impact on the relative performance of foreign and local analysts in the crisis-hit Asian countries?

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Abstract

This paper examines relative performance of foreign and local analysts in Indonesia, Malaysia, Thailand, and South Korea during the pre-crisis and the post-crisis periods. Our results show that local analysts held significant information advantage over foreign analysts during the pre-crisis period. However, this information advantage disappeared completely in the post-crisis period. Our results show no significant difference between foreign and local analysts' recommendations in the post-crisis period. It is very likely that this drastic shift in the relative performance of foreign and local analysts is at least partly due to the governance reforms that were initiated in the crisis-hit countries after the outbreak of the crisis.

JEL classification: G15; G24; G38

Keywords: Corporate Governance; Analyst Recommendations; Governance Reforms; Foreign Analysts; Local Analysts; Asian Financial Crisis.

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1. Introduction

Any list of major economic events of the past century should prominently feature the financial crisis that hit Indonesia, Malaysia, Thailand, and South Korea in the middle of 1997. The crisis led to sharp declines in currencies, stock prices, and other asset prices in the crisis-hit countries. Prior literature holds poor governance mechanisms that prevailed in the crisis-hit countries as one of the main reasons for the Asian financial crisis (hereafter AFC). Recognizing the importance of governance mechanisms, the governments of the crisis-hit countries initiated programs of governance reforms to remedy some of the inadequacies of these mechanisms. However, there is an ongoing debate on whether these governance reforms proved effective or not. Prior literature presents inconclusive evidence on the effectiveness of these reforms. Choi et al. (2006), for example, document strong positive impact of governance reforms on the performance of Korean firms in the post-crisis period, while Choi and Hasan (2005) document no significant affect of these reforms on the performance of Korean firms in the post-crisis period.[20] Another way of analyzing the effectiveness of these reforms is to study the performance of foreign and local analysts in the crisis-hit countries. Since governance reforms should have improved information disclosure in the crisis-hit countries, one of the ways to judge the effectiveness of these reforms is to test whether they were successful in eliminating information asymmetries between foreign and local analysts. If the reforms were successful, they should have resulted in a significant reduction in information advantages that local analysts may have had during the pre-crisis period.

In this paper, we present evidence that local analysts held significant information advantage over foreign analysts in the crisis-hit countries during the pre-crisis period. We argue that information asymmetries created by poor governance and inadequate disclosure mechanisms in the crisis-hit countries provided information advantage to geographically proximate local analysts. However, local analysts' information advantage disappeared completely in the post-crisis period. It is very likely that this change in the relative performance of foreign and local analysts is at

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[20] Some other similar studies are Jinarat and Quang (2004) and Crotty and Lee (2006). Jinarat and Quang (2004) show that improvement in governance mechanisms positively impact organizational performances in Thailand. Crotty and Lee (2006) show that as a result of these reforms, investment spending has stagnated in Korea.

least partly due to the governance reforms that were initiated in the crisis-hit countries after the outbreak of crisis.

We measure information advantage by the spread between returns following foreign and local analysts' buy recommendations and by the spread between returns following their sell recommendations. We show that, in Indonesia and South Korea, local analysts held significant information advantage over their foreign counterparts in buy recommendations during the pre-crisis period, while, our results document no significant information advantage for foreign or local analysts in Malaysia and Thailand. In Malaysia, however, local analysts' recommendations resulted in marginally higher returns than their counterparts' recommendations which indicate a slight information advantage for local analysts. Our results show that, in Indonesia, local analysts' information advantage over their foreign counterparts was as much as 7.2 basis points over a 112 day period following the recommendation, and in South Korea, their information advantage was as much as 7.4 basis points over the same post recommendation time period.

We argue that local analysts' information advantage in the pre-crisis period was partly due to the absence of proper governance and disclosure mechanisms in the crisis-hit countries. Prior literature documents that managers and insiders did not disclose the true underlying economic conditions of their firms in the crisis-hit countries (Leuz et al., 2003). This, in turn, allowed substantial information asymmetries to exist between foreign and local analysts, thus tilting the information advantage in favor of geographically proximate local analysts. Geographic proximity with the firms not only allowed local analysts to efficiently assess local market conditions but also enabled them to develop close personal ties with the management which may have given them access to timely private information in the crisis-hit countries.[21] In contrast, foreign analysts, being geographically at a disadvantageous location, were forced to rely on less informative published information, which may have resulted in the lower information content in their recommendations. Stultz et al. (2005) also document that in countries where disclosure mechanisms are inadequate, foreign analysts are, indeed, unable to produce as valuable information as their local

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[21] Personal networks and connections are dominant in most of the Asian countries. These relationships are generally referred in literature by specific terms such as "Guanxi" in China, "Kwankye" in Korea, and "Kankei or Toyama no Kusuri" in Japan. Prior literature documents Asian analysts' ability to acquire information using these networks as one of the most important determinants of their information (Mande and Kwak, 1996; Martin, 1999).

counterparts. It is also worth mentioning that local analysts' information advantage in buy recommendations existed despite of investment banking and underwriting pressures (Lai and Teo, 2006).

Our results also show that, on average, there was no significant difference between the returns following foreign and local analysts' sell recommendations in the crisis-hit countries, except in South Korea where foreign analysts had more information content in their recommendations. It may be because sell recommendations are highly influenced by underwriting and investment banking pressures. Lai and Teo (2006) document that local lead underwriters for the local equity issues were around 78.77% in Indonesia, 97.67% in Malaysia, 94.85% in Thailand, and 96.37% in South Korea during January 1994 and December 2003. Moreover, prior literature also documents that the culture in Asian markets is such that it prohibits analysts to issue of sell (Conroy et al., 1997). For example, till middle of 1990s, Japanese brokerage houses had the policy of not issuing sell recommendations. However, despite of these conflicts of interests, local analysts did well in the remaining of three countries. Our results show that, in Malaysia, Indonesia, and Thailand, local analysts marginally outperformed foreign analysts in sell recommendations.

Our results also show that as the crisis-hit countries began their economic recovery, the information advantage that local analysts had held during the pre-crisis period disappeared completely. One of the reasons for the disappearance of local analysts' information advantage may be the governance reforms that took place in the crisis-hit countries after the outbreak of the crisis. These reforms were aimed at improving inadequate governance mechanisms prevailing in the crisis-hit countries. We argue that reforms significantly improved the governance mechanisms, which eventually led to the improvement in the disclosure of information in these countries (Beekes and Brown, 2006). More informative disclosures leveled the playing field for foreign and local analysts by reducing the information asymmetries between them, which perhaps eventually led to the disappearance of information advantage for local analysts in the post-crisis period.

Surprisingly, our results show that on average neither foreign nor local analysts were able to differentiate well performing firms from badly performing firms

in the crisis-hit countries during the pre-crisis and the post-crisis periods.[22] We measure analysts' ability to differentiate between well performing and badly performing firms by the spread between their buy and sell recommendations. Our results show that, except in Malaysia, foreign and local analysts were not only unable to differentiate between well performing and badly performing firms but also issued sell recommendations for those firms that produced much higher returns than buy recommended firms. For example, in South Korea, during the pre-crisis period, foreign analysts' buy recommended stocks underperformed their sell recommended stocks by as much as 8.9 basis points over a post recommendation period of 112 days. Moreover, the ability of analysts to differentiate between well performing and badly performing firms deteriorated further in the post-crisis period. For example, in Thailand, during the post-crisis period, foreign analysts' buy recommended stocks underperformed their sell recommended stocks by as much as 9.1 basis points over a post recommendation period of 56 days, and local analysts' buy recommended stocks underperformed their sell recommended stocks by as much as 21.2 basis points over a post recommendation period of 112 days.

This result is in contrast to our expectations of improved ability of foreign and local analysts to differentiate between well performing and badly performing firms during the post-crisis period due to the improvements in governance and disclosure mechanisms. However, a careful look at our sample period reveals that this result may be driven by the fact that the most spectacular post-crisis recoveries were observed for those firms which analysts may already have written off. For example, financial and industrial sector firms, that suffered the most during the crisis period, were also the ones that recovered the most. Prior literature shows that post-crisis recovery in some of the crisis-hit counties was carried out by industrial sector firms. For example, in South Korea, Chaebols[23] and their affiliated firms, which were heavily hit by the crisis, were the ones that led the way out of crisis by their export driven success (Lee and Rhee, 2006). Chaebols and their affiliates showed impressive performance in the exports of semiconductors, automobiles, LCDs, and mobile phones. By the end of our sample period, i.e. end of 1999, the sales of the top five Chaebols contributed almost one-half of South Korea's GDP as well as one-half of all exports (Campbell and Keys,

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[22] Well performing firms are expected to have higher returns than badly performing firms. On average, analysts' buy recommended stocks should be followed by returns that are greater than returns that follow their sell recommendations.

[23] Family controlled conglomerates are called Chaebol in South Korea.

2002). The more successful Chaebols also surprised analysts and investors by making huge investments during our sample period. Hyundai, for example, acquired firms like Kia Motor Corporation and invested in the tourism industry in North Korea. This aggressive stance must have sent a strong positive signal to investors not only about the future prospects of Hyundai itself but also about the future prospects of Kia Motor Corporation, also a Chaebol affiliated firm.

Similarly, we also believe that the reforms affected the financial sector firms beyond the expectations of analysts and investors. Before the reforms, all deposits and investments, whether at the banks or the non-bank financial institutions (NBFIs), were perceived as risk free. But as the investors began to perceive real risk associated with NBFIs' financial products as a result of massive failures of the NBFIs after the crisis, they began to shift their savings to safe bank deposits (Cho, 2002). This resulted in the regaining of the banks' market share and therefore may have contributed to better bank performance than analysts and investors had expected.

Our results have strong implications for foreign brokerage houses who consider locating themselves in the Asian markets, especially in the former crisis hit countries. If the reforms initiated after the outbreak of the crisis significantly improved the information disclosure environment, it may nowadays be perfectly acceptable for foreign brokerage houses to cover these markets without having local presence. This implies significant cost savings for foreign brokerage houses. Moreover, our results also suggest that information disclosure mechanisms indeed improved in the crisis-hit countries during the post-crisis period. This may have induced investors to reenter the stock markets of these countries and thus contribute to the speedy economic recovery of the crisis-hit countries.

The remainder of the paper will proceed as follows: Section 2 presents the justification and background for this paper. Section 3 discusses the data used and presents summary statistics. Section 4 gives an assessment of the relative performance of foreign and local analysts' recommendations in pre-crisis and post-crisis periods, while Section 5 checks the robustness of our results. The paper ends with conclusions in Section 6.

2. Motivation and background

2.1. Corporate governance as a cause for crisis

One of the most commonly cited reason for the AFC is the poor governance mechanisms that prevailed in the crisis-hit countries prior to the crisis. [24] Extant literature attributes the sudden eruption of crisis to the cronyistic relationships among corporations, financial institutions, and governments. Another important offshoot of cronyism was the "relationship based banking system", which allowed borrowers to elude effective disclosure of the firm value. [25] Cronyism and relationship banking along with concentrated ownership structures and cross shareholdings contributed to the lack of transparency in the crisis-hit countries' firms. Investors faced an impossible task of assessing the true picture of underlying economic condition of the firms. Poor governance mechanisms, as argued by Johnson et al. (2000), seem to be at the heart of transparency problems in the crisis-hit countries. Lack of external monitoring allowed controlling shareholders to move money across group firms at will. Prior literature also suggests that once investors became aware of the inherent flaws in the governance and disclosure mechanisms, they reassessed the risks and withdrew their capital from these countries (Rajan and Zingales, 1998). For this very reason, governance mechanisms have been held responsible for causing and exacerbating the AFC. Johnson et al. (2000) suggest that governance mechanisms explain the extent of AFC more than traditional macroeconomic variables. Using data of 25 emerging markets, they show that measures of corporate governance explain the extent of depreciation and stock market performance better than macroeconomic measures. Mitton (2002) analyzes data from Indonesia, Malaysia, Thailand, South Korea and Philippines and concludes that firm-level differences in variables related to corporate governance had a strong impact on firm performance during the AFC.

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[24] Some other causes of crisis are related inappropriate macroeconomic policies, investor panic due to IMF actions, and implicit guarantees by governments for foreign loans. Corsetti et al. (1998) concludes that inappropriate macroeconomic policy during the 1990s and the inept management of the initial currency depreciation in 1997 caused the Southeast Asian Crisis. According to Radelet and Sachs (1998) IMF's focus on these complicated institutional issues and insistence on increasing interest rates and closing down of banks caused the crisis. Krugman (1998) presents a third theory based on international bank behavior, arguing there was "Pangloss Equilibrium" that caused a bubble in asset prices. In his view, the Asian panics had their origins in implicit (and implausible) guarantees offered by governments.

[25] See Rajan and Zingales (1998) for details.

2.2. IMF led recovery programs to overcome governance problems

Recognizing the importance of governance mechanisms, the governments of the crisis-hit countries initiated governance reforms under the guidance of the IMF to remedy some of the problems that existed due to inadequacies of these mechanisms in the crisis-hit countries. Poor governance mechanisms resulted in dominance of family-controlled conglomerates, weak governance of conglomerates' affiliated firms, close relationship between large conglomerates and banks, poor governance of banks, absence of mergers and acquisitions markets, and non existence of effective bankruptcy proceedings.[26] To address these problems, the IMF led governance reforms asked the governments to improve efficiency of the markets, break the close links between business and governments, improve transparency in the financial and corporate sectors, remove limitations on foreign ownership, and ensure the integration of the national economy with international financial markets.[27]

One of the most important failures of the governance mechanisms in the crisis-hit countries was their inability to prevent dominant shareholders from making key decisions unilaterally. The dominant shareholders, being able to appoint virtually 100% of directors during the pre-crisis period, were able to make decisions without taking into account the impact of their decisions on minority shareholders.[28] The subsequent reforms emphasized giving greater decision making power to minority shareholders. For instance, the reforms paid special attention to the appointment of directors who are independent of dominant shareholders. Laws and regulations were

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[26] This following discussion borrows heavily from Nam and Nam (2004).
[27] The role of the IMF was very controversial during the crisis, causing many to call the crisis as the "IMF crisis". Many experts criticized the way the IMF responded to the crisis. The IMF's response was based on offering multi-billion dollar rescue package to crisis-hit countries to enable them to avoid default. However, the IMF's support was conditional on a series of drastic economic reforms called a structural adjustment package (SAP). The SAP's called on crisis countries to cut government spending to reduce deficits, allow insolvent banks and financial institutions to fail, and aggressively raise interest rates. The reasoning was that these steps would restore confidence in the crisis-hit countries' fiscal solvency, penalize insolvent companies, and protect currency values. However, the effects of the SAP's were mixed and their impact controversial. Critics responded by arguing that the contractionary nature of the IMF policies would cause a credit crunch and will impart severe financial losses to otherwise solvent companies. They believed that the standard policy tools would have been to increase government spending, help major companies, and lower interest rates. The reasoning was that by stimulating the economy and staving off recession, governments could restore confidence while preventing economic pain.
[28] Inadequacy of governance mechanisms in Southeast Asian countries can be gauged by the fact that dominant shareholders used to appoint 100% of directors themselves, although they owned shares that were far less than 100%. They could do that by having substantial crossholdings in the firms. As a result of which directors of most of the firms were not independent of dominant shareholders.

amended to facilitate the participation of minority shareholders in decision making on important issues and to force managers to provide more accurate information to shareholders. In all four countries, reforms resulted in giving minority shareholders the right to vote on the following items: appointing and removing directors and auditors, authorizing and issuing share capital, amending the company's articles of association, engaging in major corporate transactions, and entering into transactions with related parties. These reforms were important because they gave substantial say to minority shareholders in the firm's affairs and contributed to improved transparency in publicly listed firms. Moreover, Indonesia, Korea, and Thailand even introduced cumulative voting in an attempt to give minority shareholders greater say in the voting process.[29]

Another important aspect of the reforms was to increase effectiveness of the board of directors. In the wake of AFC, it became apparent that in many firms, the board of directors did not function according to relevant laws, not to mention the spirit behind those laws. In many cases, the boards of firms in the crisis-hit countries worked primarily for the interests of dominant shareholders and frequently made decisions that were detrimental to minority shareholders. The set of reforms introduced to make boards more responsible and more effective required that boards have a minimum number of independent directors. Indonesia requires that independent directors account for at least 30% of the total number of board members; Korea requires 25% of board members to be outside directors, but corporations with asset values exceeding 2 trillion won must appoint three or more outside directors and maintain a 50% minimum of outside directors on their boards; Malaysia requires that two directors or one-third of board members be independent directors; and Thailand requires that at least two board members be independent directors.

The reforms also addressed the concerns regarding the appointment and removal of internal auditors. In the pre-crisis period, dominant shareholders were in a position to decide who would be appointed as internal auditors. As a result, auditors in many companies did not perform their duties properly and were not independent of

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[29] 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.

management. The subsequent reforms resulted in substantially relaxing the minimum threshold shares needed for minority shareholders to exercise their rights regarding internal auditors. For instance, in South Korea, the threshold shares needed to exercise the right to call for an emergency shareholders' meeting was lowered from 5% to 3%. The minimum threshold shares to exercise the right to inspect accounting books, which used to be 5% before 1997, was lowered several times and eventually to 0.1% in 2001. The thresholds for the rights to demand dismissal of a director or an auditor and to bring a derivative suit were lowered from 5% before the crisis to 0.5% and 0.01%, respectively, by 1999 for listed corporations.

Prior literature documents that information disclosure was incomplete and procedures for disclosure seriously flawed in Indonesia, Malaysia, Thailand, and South Korea before the crisis. The only legal requirement regarding disclosure for firms in these countries, prior to crisis, was to publish the audited annual reports after the end of the business year. The reforms have improved the disclosure quality by making it mandatory for firms to make more frequent disclosures. Firms in these countries now require quarterly submission of financial reports and immediate reporting of information that might influence stock prices. Another important step taken to increase quality of the information disclosed was to improve the reliability and independence of auditing by external auditors. Indonesia and Korea introduced measures aimed at discouraging collusion by management and external auditors by limiting the period during which an auditor can audit a company. Indonesia has now set the maximum time for which the same auditing firm can audit a company at 5 years. This limit is 6 years in Korea. Malaysia does not impose any restrictions. Thailand has a limit, but only for banks, which is 5 years.

Reforms have given a lot of emphasis to the auditing standards in the four crisis-hit countries. Auditing standards have been enhanced gradually to meet international standards so that presently there is little divergence between their national standards and the Generally Accepted Accounting Principles (GAAP). In addition, penalties for violating laws and regulations on auditing, which had existed for a long time but had rarely been enforced before 1997, have been made more severe. In Korea and Malaysia, auditors and companies that violate laws and regulations on auditing and information disclosure can face suspension of auditing licenses and delisting of companies, in addition to fines and warnings. Penalties for violations are, somehow, weaker in Indonesia and Thailand.

An important feature of Asian firms was the dominance of families' controlled conglomerates.[30] The conglomerates were characterized by nontransparent accounting, interlocking ownership between the corporate and financial sectors, and weak minority shareholder rights. As a result, owners of these conglomerates had the incentives and means to divert resources from the firms under their control. In particular, they were in a position to use transactions between affiliated firms to divert resources from them. Prior literature has held these conglomerates responsible for some of the problems that led to severity of AFC (Campbell and Keys, 2002). In addition to structural reforms described above, the crisis-hit countries also took measures to minimize the use of transactions between affiliated firms. Thailand, for example, requires complete disclosure of related-party transactions. Malaysia has also enhanced regulations governing related-party transactions and now requires management to fully inform shareholders about all related-party transactions involving money or assets that exceed a certain level. Furthermore, management is required to appoint an independent adviser to ensure that related-party transactions involving such amounts are carried out on a fair and reasonable basis. In addition, advance shareholder approval is needed for such transactions. South Korea requires that firm's board of directors must approve related party transactions involving amounts in excess of 1% of a firm's annual revenues or total asset value, and such transactions must be reported to shareholders at a general shareholders' meeting. A set of transactions whose combined total amount exceeds 5% of the annual revenue or total asset value is also subject to the regulation. In addition to this, in South Korea, the Monopoly Regulation and Fair Trade Act requires firms belonging to large Chaebol groups to obtain approval from their boards of directors for certain transactions involving sums in excess of 1% of the firm's equity or 10 billion won with affiliated firms and to disclose them to shareholders. South Korea further enhanced the governance of Chaebol by holding their leaders more accountable for managerial performances, boosting managerial transparency, focusing on core business, and eliminating loan guarantees among affiliates.

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[30] It is estimated that the top 10 families in Indonesia in 1997 controlled corporations worth more than half the country's market capitalization. Comparable figures are one-half in Thailand, one-fourth in Korea and Malaysia, but only 2 to 3 percent in Japan.

2.3. Effects of structural reforms on the relative performance of analysts

Governance mechanisms are the means by which managers are persuaded to act in the interest of outside stakeholders. High quality corporate governance mechanisms ensure the provision of reliable public information and deter corporate insiders from seeking their private benefits at the expense of outside stakeholders (Johnson et al., 2000). In such an environment, managers have fewer incentives to distort information about the underlying economic performance of their firms (Leuz et. al., 2003), which in turn enhances the quality of information that managers make publicly available. Prior literature on the relationship between governance mechanisms and information asymmetries show that when governance mechanisms improve, information asymmetries decrease. Chen and Jaggi (2000) examine the association between independent non-executive directors and comprehensiveness of information in mandatory financial disclosures. They find empirical evidence of a positive relation between proportion of independent directors and disclosure. Eng and Mak (2003) study firms from Singapore and show that decrease in managerial ownership significantly improve disclosure levels.

As described above, most of the reforms initiated in the crisis-hit countries were aimed at improving the governance and disclosure mechanisms by adopting international accounting standards, improving minority shareholder rights, enhancing minority shareholders' participation in corporate decision making, making boards of directors more effective and more independent of management, and improving governance of companies affiliated with conglomerates. Prior literature shows that analysts' performance improves significantly with the improvement in the governance mechanisms (Hope, 2003; Ashbaugh and Pincus, 2001; Chang et. al., 2000). These studies point out that adoption of higher governance mechanisms reduce information asymmetry and thus add to the forecasting abilities of analysts.

One of the most important aspects of reforms in the crisis-hit countries was the adoption to International Accounting Standards (IAS). Adoption of IAS requires firms to expand their disclosures and be more transparent (Lowenstein, 1996). Prior literature documents that analysts' forecast accuracy improves as firms' disclosure levels increase (Chiang, 2005; Hope, 2003; Lobo et al., 1998; Lang and Lundholm, 1996). IAS also restricts firms' choices of accounting measurement methods. With fewer measurement rules to deal with, analysts should be better able to master the

existing set. Hence, restrictions on measurement methods as well as expansion in disclosure levels that results from adopting IAS should enable analysts to produce more accurate information. Ashbaugh and Pincus (2001) study non-US firms that use IAS and conclude that adoption of IAS is positively associated with the reduction in analyst forecast errors for those firms.

Lack of minority shareholder rights and ineffectiveness of board of directors were among some of the most important reasons why information disclosure was limited in the pre-crisis period. Prior literature has also shown that both of these factors are responsible for deficiency in the disclosure of information (La Porta et al., 1998). Therefore, the reforms asked for improving minority shareholder rights and increasing the effectiveness of board of directors by making them more independent of management. Since both of these reforms helped in increasing the disclosure of information, so we expect analysts to produce more accurate information after these reforms. 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.

The crisis-hit countries were also dominated by family controlled conglomerates. Prior literature has highlighted the fact that family controlled conglomerates are hard to monitor because of inadequate disclosure regarding related party transactions among group firms (Chang et. al., 2000). Since, structural reforms in the crisis-hit countries addresses some of the issue related to information asymmetries in family controlled conglomerates, so we can expect analysts to perform better for such firms in the post crisis period.

As has been discussed so far, the reforms reduced information asymmetries and leveled the playing field between foreign and local analysts. As a result, we expect any information advantage that local analysts may have had during the pre-crisis period to disappear or decrease substantially in the post-crisis period. Moreover, we believe that the reduction in information asymmetries that these reforms resulted in was more beneficial for foreign analysts than for local analysts. Local analysts were enjoying personal relationships with the firms in the pre-crisis period which gave them access to private information; therefore any reforms that improve governance and disclosure mechanisms should have reduced their advantage over distant foreign analysts by limiting the flow of private information to them. We expect foreign analysts to significantly improve their post-crisis period performance in comparison to

their performance in the pre-crisis period and even to match the performance of their geographically proximate counterparts in the post-crisis period.

3. Data

In this paper, we will focus on the relative performance of foreign and local analysts in Indonesia, Malaysia, Thailand, and South Korea using stock recommendations issued during the pre-crisis and the post-crisis periods. The pre-crisis period spans from January 1, 1996 to July 1, 1997, while the post-crisis period covers the time period from September 1, 1998 to December 31, 1999. The choice of time period is driven by the previous literature that identifies these time period as the pre-crisis and the post-crisis periods (Kamesake and Wang, 2004a). We exclude the crisis period, July 2, 1997 to August 31, 1998, from our analysis, as it was a period when the reforms were in their initial stages. Since it is hard to predict which of the two groups will enjoy the information advantage during the initial implementation stages of governance reforms, we drop this period from our analysis. We will, briefly, discuss the data in the following sub-sections.

3.1. Stock prices and market index

We extracted stock price data and market index data from Datastream for the pre-crisis and the post-crisis periods. The stock price data was obtained for the day of recommendation and subsequent 14, 28, 42, 56, and 112 days for the firms represented in analyst recommendations dataset. 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. Classification of analysts

Analysts are classified as foreign or local based on the country of origin of the brokerage houses that employ them. Analysts working for local brokerage houses are

classified as local analysts, while analysts working for foreign brokerage houses are classified as foreign analysts.[31]

Brokerage houses are classified as local or foreign depending on two conditions: (1) location of their head-office and (2) presence in the country under discussion. All brokerage houses with head-offices located in Asia and having local presence are classified as local. In contrast, brokerage houses with head-offices located outside Asia and having no local presence are classified as foreign. We obtain information about location of head-offices of brokerage houses from brokerage houses' websites and www.business.com.

It was difficult to determine if brokerage houses had local presence or not during the time of crisis. Websites of brokerage houses, stock exchanges, or security exchange commissions do not provide much information on that. We, however, used the information provided in I/B/E/S Detail International History-Recommendation file to separate out those brokerage houses that had local presence from those that did not have local presence during crisis period. I/B/E/S file assigns unique code to each of the contributing brokerage house. Brokerage houses having several subsidiaries have separate code for each subsidiary. For example, J. P. Morgan operates across the globe having subsidiaries in all parts of the world. I/B/E/S assigns unique code to each of its subsidiary. We exploit this property of I/B/E/S data to find out which brokerage house had local presence and which did not have local presence during crisis period. A basic assumption that we make in this process is that if a brokerage house has a local presence, it should issue the largest number of its recommendations for firms located in that country. Therefore, if a brokerage house issues the largest number of its recommendations for stocks in country x, we classify it as having local presence in country x.

Table 1 presents descriptive statistics for foreign and local brokerage houses during the pre-crisis and the post-crisis periods. It is noteworthy to mention that all of the countries in our sample attracted substantial interest from foreign brokerage houses during our sample period. The number of foreign brokerage houses in fact

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[31] We recognize the importance of personal characteristics of analysts in determining their performance, but for this study we have deliberately ignored them. Prior literature also documents that personal characteristics of analysts are of lesser importance in Asian markets as compared to Western markets (Fuchita, 2005). We believe that classification based on brokerage houses will allow us to differentiate analysts in a better way, because local brokerage houses are better placed to provide their analysts a channel to develop those personal relationships and networks that are so important in Asian markets.

exceeded the number of local brokerage houses in all countries throughout our sample period.

[Insert Table 1 here]

3.3. Analyst recommendations

We obtain analyst recommendations data from the I/B/E/S Detail International History-Recommendation file. [32] I/B/E/S Detail International History-Recommendation file provides a data entry for each recommendation announcement by each analyst whose brokerage house contributes to the database. Each observation in the file represents the issuance of a recommendation by a particular brokerage house for a specific firm. For instance, one observation would be a recommendation by Brokerage House ABC regarding Firm XYZ. 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 fewer buy and underperform recommendations in our sample. 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 2, Panel A and Panel B, presents summary statistics for our final dataset on analyst recommendations. On average foreign analysts issued recommendations for firms that had higher market capitalization than the firms that were covered by local analysts during our sample period. Thailand is the only exception where foreign analysts' covered firms had lower market capitalization than the firms covered by

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[32] It is important to mention here that Ljungqvist et al. (2006) document that I/B/E/S recommendations are subject to be rewritten. They show that the some "bad" analysts' reports on I/B/E/S are subsequently removed from the database in later versions. We expect foreign analysts to engage in such activities more than the local analysts, probably due to more concerns regarding reputation; therefore our results may be biased in favor of foreign analysts.

local analysts during the pre-crisis as well as the post-crisis periods. An interesting finding of Table 2 is that foreign analysts gradually reduced their coverage of firms in all countries. Foreign analysts' coverage is highest in the pre-crisis period and lowest in the post-crisis period. Moreover, Table 2, Panel B, shows that local analysts' coverage of firms was more extensive than the coverage by foreign analysts in all countries in the post-crisis period.

[Insert Table 2 here]

Ten different industries are represented in our sample, as seen in Table 3, Panel A and Panel B. Our classification of industries is based on Industry Classification Benchmark (ICB). ICB classification has been created by FTSE. Panel A shows that foreign and local analysts issued most of their recommendations for Industrial sector in Malaysia and South Korea, and for Consumer Goods sector in Indonesia during the pre-crisis period. In Thailand, during the pre-crisis period, foreign analysts preferred Financials sector and local analysts preferred Industrial sector in their recommendations. Panel B documents sectors which analysts covered in their recommendations during the post-crisis period. It shows that foreign and local analysts issued most of their recommendations for firms in the Consumer Goods sector in Indonesia, the Financials sector in Thailand, and the Industrial sector in South Korea. In Malaysia during the post-crisis period, foreign analysts preferred the Financials sector and local analysts preferred the Industrial sector in their recommendations. In Table 3, we find no consistent evidence that a particular sector is followed more by a given group of analysts.

[Insert Table 3 here]

Table 4 shows the number and percentage of each type of recommendations issued by foreign and local analysts during the pre-crisis and the post-crisis periods. Panel A1 and Panel B1 document the number, while Panel A2 and Panel B2 tabulate the percentage of the types of recommendations issued by analysts.[33] An interesting result in Table 4, Panel B2, is that local analysts issue a higher percentage of their

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[33] In this table, we have characterized all strong buy and buy as buy recommendations, and all underperform and sell as sell recommendations.

recommendations as sell recommendations than what foreign analysts do in all countries in the post-crisis period. Table 4, Panel B2, also shows that foreign analysts issue more of their recommendations as buy in all countries except Malaysia during the post-crisis periods. The result for South Korea is very interesting as foreign analysts issue almost twice as much of their recommendations as buy recommendations in both periods. It might show the confidence that foreign analysts may have in the vibrant South Korean economy. However, these results are a little surprising, because due to the dominance of local underwriters in these markets' equity issues (Lai and Teo, 2006; Sullivan and Unite, 2001; Kim et al., 1995), local analysts should have issued greater number of their recommendations as buy recommendations. Moreover, Table 4, Panel A1, shows that we have very limited local analysts' recommendations in Indonesia and Thailand in the pre-crisis period.

[Insert Table 4 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 to build their recommendations on? If so, their recommendations should predict future stock returns (Womack, 1996; Stickel, 1995). However, if the recommendation builds on information that is already well known to the public or on no value relevant information, there should be no relationship between the 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 whether local analysts had any information advantage over their foreign counterparts during the pre-crisis period and what happened to that information advantage after the implementation of governance reforms during the post-crisis period.

In order to analyze the information advantage of one group over the other, we estimate regression on cumulative market-adjusted returns following analysts' recommendation, CMAR, with eight dummy variables representing foreign and local analysts' buy and sell recommendations during the pre-crisis and the post-crisis periods. If local analysts are more informative than foreign analysts, the coefficient

estimate of dummy variable representing the local analysts' buy recommendations should be significantly larger than the coefficient estimate of dummy variable representing the foreign analysts' buy recommendations.[34] While, the reverse should hold for dummy variable representing sell recommendations. Moreover, we also recognize the importance of firm-specific characteristics of stocks recommended by foreign and local analysts. It is possible that local analysts cover smaller firms than foreign analysts do and smaller stocks underperformed large stocks in the sample period. This may, therefore, result in the inferior performance of local analysts' buy recommendations and superior performance of local analysts' sell recommendations. Similarly, it is also possible that foreign analysts cover stocks with less information asymmetry. To address these concerns, we add number of control variables that capture sentiments in the stock market, the amount of public information, optimism in analysts' recommendations, and interest or following that a firm might have. For example, the number of analyst following for a stock, *Analyst _ Foll*, was added to capture the amount of public information, while market value of a stock, *Log _ MV*, was added to capture investors' interest in a particular stock. We also controlled for optimism[35], *OPT*, in analysts' recommendations. Lai and Teo (2006) account optimism as one of the factor that differentiates the performance of foreign and local analysts' recommendations. We added a dummy variable, *Trans _ Period*, to capture the transition from pre-crisis period to crisis period and from crisis period to post-crisis period. Transition period takes the value of 1 if the recommendation is issued during the period leading up to the crisis, i.e. January 1, 1997 to July 1, 1997, or during the initial period of recovery, i.e. September 1, 1998 to December 31, 1998. Market index on the day of recommendation, *Mkt _ Ind*, was added as a control variable to capture the sentiments prevailing in the stock market at the time of issuance of recommendations. We also added industrial dummies, *Ind _ Dum*, to captures the effects of industries on the performance of recommendations.

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[34] For example, in our case, this would mean that in equation (1), $\beta_1^{\text{Pre,LB}} > \beta_1^{\text{Pre,FB}}$. Similar arguments will go for sell recommendations.

[35] Optimism variable is defined as the difference between analysts' recommendation and last month consensus recommendation (Lai and Teo, 2006). Both of the variables required to calculate optimism are taken from I/B/E/S.

Our basic equation will regress T-day cumulative market-adjusted returns, $CMAR_{S,T,t}$, on the interaction between the analysts' dummies, the recommendation level dummies, and time period dummies as follows[36]:

$$
\begin{aligned}
CMAR_{S,T,t} = \alpha &+ \beta_1^{\mathrm{Pre},LB}\left(Local\_Buy_{S,t,\mathrm{Pre}}\right) + \beta_2^{\mathrm{Pre},FB}\left(Foreign\_Buy_{S,t,\mathrm{Pre}}\right) \\
&+ \beta_3^{\mathrm{Pre},LS}\left(Local\_Sell_{S,t,\mathrm{Pre}}\right) + \beta_4^{\mathrm{Pre},FS}\left(Foreign\_Sell_{S,t,\mathrm{Pre}}\right) \\
&+ \beta_5^{Post,LB}\left(Local\_Buy_{S,t,Post}\right) + \beta_6^{Post,FB}\left(Foreign\_Buy_{S,t,Post}\right) \\
&+ \beta_7^{Post,LS}\left(Local\_Sell_{S,t,Post}\right) + \beta_8^{Post,FS}\left(Foreign\_Sell_{S,t,Post}\right) \\
&+ \beta_9\left(Analyst\_Foll_S\right) + \beta_{10}\left(Log\_MV_{S,t}\right) + \beta_{11}\left(OPT_{S,t}\right) \\
&+ \beta_{12}\left(Trans\_Period_t\right) + \beta_{13}\left(Mkt\_Ind_t\right) + \beta\left(Ind\_Dum_S\right) + \varepsilon_{S,T,t} \quad (1)
\end{aligned}
$$

Where $Local\_Buy_{S,t,\mathrm{Pre}}$ ($Foreign\_Buy_{S,t,\mathrm{Pre}}$) is the dummy variable that is equal to 1 if local (foreign) analyst issued buy recommendation for stock 'S' on day 't' during the pre-crisis period and 0 otherwise, and $Local\_Buy_{S,t,Post}$ ($Foreign\_Buy_{S,t,Post}$) is the dummy variable that is equal to 1 if local analyst (foreign) issued buy recommendation for stock 'S' on day 't' during the post-crisis period and 0 otherwise.

Table 5, Panel A through Panel D, reports the regression coefficients for foreign and local analysts buy and sell recommendations during the pre-crisis and the post-crisis periods.

[Insert Table 5 here]

Table 6 documents the differences between the performance of foreign and local analysts' recommendations, i.e. difference between regression coefficients reported in Table 5 during the pre-crisis and the post-crisis periods, using Wald's test. Our results show that local analysts' buy recommendations significantly outperform foreign analysts' buy recommendations in Indonesia (Table 6, Panel A1) and South Korea (Table 6, Panel D1) for all lead days during the pre-crisis period. In Indonesia, the superior performance of local analysts' buy recommendations is as high as 7.2 basis points for the lead of 112 days, while in South Korea, it is as high as 7.4 basis

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[36] There can be concerns that some of the pre-crisis period observations' returns spill into the crisis period. In order to overcome such concerns, we re-estimate Equation (1) by using only those observations for which we have no spillover into the crisis period. We excluded any pre-crisis period recommendation that was issued during the last 56 days of the pre-crisis period. This allowed us to do our analysis on the sample that has no spillover into the crisis period for the lead of 14, 28, 42, and 56 days. Our results from this sample are virtually the same as the results from the full sample.

points for the lead of 112 days. Furthermore, it is important to mention that the relationship is increasing over time implying that information possessed by local analysts was persistent. In Malaysia (Table 6, Panel B1), the difference between foreign and local analysts' buy recommendations is insignificant. However, we see that even in Malaysia, local analysts' buy recommendations marginally perform better than foreign analysts' recommendations for the lead of 14, 28, 42, and 56 days. The results in Thailand (Table 6, Panel C1) show that foreign analysts' buy recommendations significantly outperform local analysts' buy recommendations by 4.0 basis points only for the lead of 42 days. For the rest of the lead days, we document no significant difference between foreign and local analysts' buy recommendations. We argue that superiority of local analysts' buy recommendations in the pre-crisis period was due to the fact that, in the absence of proper governance and disclosure mechanisms, information advantage tilted in the favor of local analysts. Foreign analysts, being geographically at a disadvantageous location, were not able to extract valuable information from the firm-level disclosed information. This result is consistent with Stultz et al. (2005), who also conclude that poor information disclosure by emerging market firms do not allow foreign analysts to obtain access to as valuable information as local analysts.

In case of sell recommendations, our results show that there was no significant difference between foreign and local analysts' sell recommendations in Indonesia (Table 6, Panel A1) and Thailand (Table 6, Panel C1) during the pre-crisis period. In Malaysia (Table 6, Panel B1), however, local analysts' sell recommendations outperform foreign analysts' sell recommendations by as much as 1.2 basis points for the lead of 42 days. Local analysts were not only better informed in Malaysia, but also relatively unbiased. In contrast, in South Korea (Table 6, Panel D1), the results show that foreign analysts' sell recommendations outperformed local analysts' sell recommendations by as much as 4.3 basis points for the lead of 42 days. We argue that relatively weak showing of local analysts' sell recommendations in these markets might be due to the fact that local brokerage houses overwhelmingly dominate underwriting industry in these markets (Lai and Teo, 2006; Sullivan and Unite, 2001; Kim et al., 1995).[37] Due to increased investment banking pressures, local analysts

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[37] Lai and Teo (2006) document that local lead underwriters for the local equity issues were around 78.77% in Indonesia, 97.67% in Malaysia, 94.85% in Thailand, and 96.37% in South Korea during January 1994 and December 2003. We expect this percentage to be even higher during our sample

might not be able to produce more informative sell recommendations. Moreover, prior literature has also documented that local analysts in Asia are less free to issue sell recommendations due to cultural prohibitions and close personal ties (Martin, 1999; Mande and Kwak, 1996).

Table 6, Panel A2 through Panel D2, document the results for the relative performance of foreign and local analysts' recommendations in the post-crisis period. Unlike the results for the pre-crisis period, we show that there is no significant difference between foreign and local analysts' recommendations in the post-crisis period. One of the reasons for the disappearance of differences between foreign and local analysts' recommendations is the structural reforms that took place in the crisis-hit countries after the outbreak of crisis. Main aim of these reforms was to improve governance and disclosure mechanisms in the crisis-hit countries. We argue that these reforms leveled the playing field for foreign and local analysts by reducing the information asymmetry between foreign and local analysts. This perhaps led to the disappearance of differences between foreign and local analysts' recommendations in the post-crisis period.

We also compute the spread between the buy and sell recommendations within each group of analysts. Prior literature considers this as a measure of the overall value of analysts' recommendations (Jegadeesh and Kim, 2006) and as their ability to differentiate between well performing and badly performing firms. Our results show that, on average, foreign and local analysts were not able to differentiate between well performing and badly performing firms during the pre-crisis and the post-crisis periods, except in Malaysia where they performed relatively better than other countries. For example, in Indonesia during the pre-crisis period (Table 6, Panel D1), our results show that the spread between foreign analysts' buy and sell recommendations was as negative as 15.9 basis point for the lead of 112 days, while in Thailand during the post-crisis period (Table 6, Panel C2) the spread between local analysts' buy and sell recommendations was as negative as 21.2 basis point for the lead of 112 days. It is surprising that despite of governance reforms that were initiated after the onset of crisis, foreign and local analysts were not able to differentiate between well performing and badly performing firms in these countries in the post-crisis period. It may be due to the fact that the most spectacular post-crisis recoveries

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period due to the fact that during our sample period underwriting business might be even less lucrative than it is now.

may have been observed for the firms for which analysts as well as investors may have held a very critical view. Since, price changes are due to surprises and surprises may have been given by the firms that were previously written off by analysts and investors. These results also point to the fact that it is often misleading to use spread between analysts' buy and sell recommendations to measure the relative performance of analysts. For example, in case of Malaysia (Table 6, Panel B2), we have shown that no significant difference between foreign and local analysts exist if evaluated based on the difference between their buy recommendations and their sell recommendations. However, if we use spread between analysts' buy and sell recommendations as a performance measure, we may have a strong case in favor of foreign analysts in Malaysia in the post-crisis period. Therefore, caution may be observed while interpreting these results, as different performance measures may provide totally different results.

[Insert Table 6 here]

Table 7, Panel A through Panel D, documents the difference between foreign and local analysts' recommendations across the pre-crisis and the post-crisis periods. Our results show that foreign analysts' post-crisis buy recommendations performed better than their pre-crisis buy recommendations in all countries. For example, in Indonesia (Table 7, Panel A), foreign analysts' post-crisis buy recommendations outperformed their pre-crisis buy recommendations by as much as 10.5 basis points for the lead of 112 days. On the other hand, local analysts were not able to improve their buy recommendations from the pre-crisis level. In fact, in South Korea (Table 7, Panel D), their post-crisis buy recommendations underperformed their pre-crisis buy recommendations by as much as 3.4 basis points for the lead of 14 days. However, both foreign and local analysts' post-crisis sell recommendations deteriorated from their pre-crisis level. For example, in Thailand (Table 7, Panel C), foreign analysts' post-crisis sell recommendations underperformed their pre-crisis sell recommendations by as much as 12.5 basis points for the lead of 56 days, and local analysts' post-crisis sell recommendations underperformed their pre-crisis sell recommendations by as much as 20.2 basis points for the lead of 112 days. As pointed out earlier, this result may be due to the fact that the most spectacular post-crisis recoveries were observed for the firms which analysts may have written off.

[Insert Table 7 here]

Table 8, Panel A1 through Panel D1, documents whether the difference between foreign and local analysts' buy recommendations and between their sell recommendations in the pre-crisis period is different from the respective differences in the post-crisis period. In Malaysia (Table 8, Panel B1) and Thailand (Table 8, Panel C1), our results show no significant change in the pre-crisis and the post-crisis periods in the difference between foreign and local analysts' buy recommendations. However, in Indonesia (Table 8, Panel A1) and South Korea (Table 8, Panel D1), we document a significant change between the pre-crisis and the post-crisis periods. Our results show that in these two countries, i.e. Indonesia and South Korea, local analysts significantly lost their information advantage relative to foreign analysts in the post-crisis period in their buy recommendations. In Indonesia, local analysts information advantage decreased by as much as 4.7 basis points for the lead of 42 days, while in South Korea their advantage decreased by as much as 5.7 basis points for the lead of 14 days. This result also confirm our previous findings that implementation of governance reforms decreased the information asymmetries between foreign and local analysts by increasing the disclosure levels in the crisis-hit countries. Increase in disclosure levels affected local analysts information advantage relative to foreign analysts in a way that it decreased the amount of additional private information that they used to possess in excess of information that foreign analysts had. In case of the difference between foreign and local analysts' sell recommendations, our results show no significant change in the pre-crisis and the post-crisis periods in Indonesia (Table 8, Panel A1) and Malaysia (Table 8, Panel B1). However, in Thailand (Table 8, Panel C1) and South Korea (Table 8, Panel D1), we document a significant change between the pre-crisis and the post-crisis periods. In Thailand, local analysts' advantage in sell recommendations decreased by as much as 8.7 basis points for the lead of 112 days and in South Korea, local analysts' advantage increased by as much as 8.5 basis points for the lead of 42 days.

Table 8, Panel A2 through Panel D2, documents whether analysts' ability to differentiate between well performing and badly performing firms is different in the pre-crisis period from the post-crisis period. We document that there was no significant change in pre-crisis and post-crisis foreign analysts' ability to differentiate

between well performing and badly performing firms in all countries except in Thailand. In Thailand (Table 8, Panel C2), contrary to our expectations, we see that foreign analysts' ability to differentiate good firms from bad firms deteriorated by as much as 11.4 basis point for the lead of 112 days in the post-crisis period. We also document that local analysts' ability to differentiate between well performing and badly performing firms did not change from their pre-crisis level in Indonesia and Malaysia in the post-crisis period. However, in Thailand (Table 8, Panel C2), local analysts' ability to differentiate between well performing and badly performing firms decreases by as much as 20.4 basis points for the lead of 112 days. In South Korea (Table 8, Panel D2), we observe an increase in local analysts' ability to differentiate between well performing and badly performing firms by as much as 6.1 basis points for the lead of 56 days.

[Insert Table 8 here]

5. Robustness of results

In this section, we explore the robustness of our results by redoing the above analysis for the different industrial sectors. Prior literature holds weaknesses in the Financial and the Industrial sectors as the main reason why Asian countries experienced one of the worst crises of the recent economic history. Therefore, most of the reforms that were carried out in the crisis-hit countries revolved around these two sectors. In this section, we will perform the above analysis for these two industrial sectors. Since, majority of reforms were carried out in these two industrial sectors, so the effect of reforms should also be more pronounced in these two sectors.

In ideal circumstances, we would do the above analysis for the Financial and the Industrial sectors in each of the crisis-hit countries. Unfortunately, in Indonesia and Thailand, we are left with minimal sample size if we segregate our sample based on industrial sectors. Therefore, we will not perform our analysis for the Financial and the Industrial sectors in these two countries. In case of Malaysia, the reforms did take place, but they were not as radical as they were in the other crisis-hit countries. Prior literature also documents that governance mechanisms in Malaysia were in much better shape even before the crisis period (Nam and Nam, 2002). Therefore, the reforms that were initiated in Malaysia were gradual rather than drastic and not

specific to a particular sector. This leaves us with South Korea. We will, therefore, redo our analysis for the Financial and the Industrial sectors in South Korea. The results are reported in Table 9, Table 10, Table 11, and Table 12. Table 9 documents the regression coefficients for foreign and local analysts buy and sell recommendations during the pre-crisis and the post-crisis periods, Table 10 reports the difference between analysts' recommendations during the pre-crisis and the post-crisis periods, and Table 11 and Table 12 show the difference between analysts' recommendations across both time periods.

Our results in Table 10, Panel A1 and Panel A2, show that there is no significant difference between foreign and local analysts' recommendations in the Financial sector during the pre-crisis and the post-crisis periods. However, in the Industrial sector, our results in Table 10, Panel B1 and Panel B2, reveal a significant information advantage for local analysts in the pre-crisis period. This information advantage evaporated in the post-crisis period, most likely as a result of reforms that were undertaken after the outbreak of crisis. Our results also show that both foreign and local analysts were not able to efficiently differentiate between well performing and badly performing firms neither in the Financial sector nor in the Industrial sector during both time periods. Table 11 shows that foreign analysts gained substantial information advantage in the Industrial sector in the post-crisis period, while local analysts lost their information advantage in that sector during the post-crisis period. Our results in Table 12, Panel A2, indicate that, in Financial sector, foreign analysts significantly improved their ability to differentiate between well performing and badly performing firms during the post-crisis period in comparison to their ability in the pre-crisis period, while local analysts' ability to differentiate between well performing and badly performing firms significantly diminished. Moreover, Table 12, Panel B1, shows that local analysts significantly lost their information advantage in the Industrial sector in the post crisis period.

[Insert Table 9 here]
[Insert Table 10 here]
[Insert Table 11 here]
[Insert Table 12 here]

6. Conclusion

We examined the performance of foreign and local analysts' stock recommendations in Indonesia, Malaysia, Thailand, and South Korea during the pre-crisis and the post-crisis periods. Our results show that local analysts held significant information advantage in these countries during the pre-crisis period. We argue that the superiority of local analysts in the pre-crisis period was partly due to the absence of proper governance and disclosure mechanisms, which made it difficult for foreign analysts to access any relevant private information from their remote geographic location.

However, our results show that as the crisis-hit countries began their recovery from the crisis, the information advantage that local analysts had during the pre-crisis period disappeared completely. The significant difference between foreign and local analysts' recommendations disappeared completely during the post-crisis period. One of the reasons for the disappearance of local analysts' information advantage may be the structural reforms that took place in the crisis-hit countries after the outbreak of crisis. We argue that reforms significantly improved the governance mechanisms, which eventually led to the improvement in the disclosure of information in the crisis-hit countries.

This seemingly destructive result for analysts as information intermediaries may, however, be driven by the fact that the most spectacular post-crisis recoveries were observed for the firms for which analysts as well as investors held a very critical view. Firms that were written off by analysts and investors in the depth of the crisis were probably the ones that produced the highest returns in the recovery. In contrast well performing firms that become somewhat better due to the undertaken reforms did not increase as much in value. However, more research is required to substantiate this claim.

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Table 1
Distribution of brokerage houses
The table shows the number of foreign and local brokerage houses that issued at least one recommendation in Indonesia, Malaysia, Thailand, and South Korea from January 1, 1996 to December 31, 1999. Our sample period covers pre-crisis, crisis, and post-crisis periods. Foreign brokerage houses are those with head-offices outside Asia and having no physical presence in country whose firms they are covering. Local brokerage houses are those that have their head-office in Asia and have presence in the country under study.

Panel A: Pre-crisis period

Country	Foreign Brokerage Houses	Local Brokerage Houses	Foreign Brokerage Houses / Local Brokerage Houses
Indonesia	11	3	3.66
Malaysia	19	11	1.72
Thailand	15	4	3.75
South Korea	10	3	3.33

Panel B: Post-crisis period

Country	Foreign Brokerage Houses	Local Brokerage Houses	Foreign Brokerage Houses / Local Brokerage Houses
Indonesia	15	10	15
Malaysia	19	16	19
Thailand	18	7	18
South Korea	15	9	15

Table 2
Basic descriptive statistics
This table presents the descriptive statistics for the sample. The sample includes all firms in Indonesia, Malaysia, Thailand, and South Korea that have at least one recommendation issued by local or foreign analysts. The columns present number of firms covered, number of recommendations issued, average number of recommendations per firm, and average market capitalization on the day of recommendation. The sample period is from January 1, 1996 to December 31, 1999. Our sample period covers pre-crisis, crisis, and post-crisis periods.

Panel A: Pre-crisis period

Country	Number of Firms Covered		Number of Recommendations		Recommendations Per Firm		Average Market Capitalization on Recommendation Date (Local Currency)	
	Foreign	Local	Foreign	Local	Foreign	Local	Foreign	Local
Indonesia	109	88	728	217	6.67	2.46	2722459.00	2139923.00
Malaysia	218	246	1792	1654	8.22	6.72	5191.64	4408.50
Thailand	292	88	1712	203	5.86	2.30	25147.72	27761.59
South Korea	237	498	553	1349	2.33	2.70	1089909.00	372234.70

Panel B: Post-crisis period

Country	Number of Firms Covered		Number of Recommendations		Recommendations Per Firm		Average Market Capitalization on Recommendation Date (Local Currency)	
	Foreign	Local	Foreign	Local	Foreign	Local	Foreign	Local
Indonesia	55	66	461	540	8.38	8.18	6541102.00	6170342.00
Malaysia	122	175	1161	1918	9.51	10.96	4541.38	3623.75
Thailand	80	106	996	552	12.45	5.20	29420.60	31388.66
South Korea	169	577	1016	2908	6.01	5.03	2374315.00	618515.30

Table 3
Industries followed by foreign and local analysts
This table presents the descriptive statistics for the type of firms covered in our sample by foreign and local analysts in each country. The sample includes all firms in Indonesia, Malaysia, Thailand, and South Korea that have at least one recommendation issued by local or foreign analysts. The sample period is from January 1, 1996 to December 31, 1999. Our sample period covers pre-crisis, crisis, and post-crisis periods.

Panel A: Pre-crisis period

ICB Industrial Segments	Indonesia		Malaysia		Thailand		South Korea	
	Foreign	Local	Foreign	Local	Foreign	Local	Foreign	Local
Oil and Gas	0.0%	2.3%	0.7%	0.9%	2.8%	1.5%	2.2%	1.1%
Basic Materials	9.3%	12.9%	4.5%	3.3%	10.8%	8.4%	12.7%	13.4%
Industrial	18.0%	17.5%	27.3%	27.8%	17.1%	26.1%	20.4%	24.8%
Consumer Goods	25.7%	23.5%	12.7%	14.3%	14.6%	8.9%	12.5%	18.8%
Healthcare	7.0%	5.5%	0.5%	0.8%	1.3%	0.0%	2.0%	5.3%
Consumer Services	12.0%	10.1%	13.7%	13.2%	11.0%	8.9%	4.0%	2.7%
Telecommunications	7.1%	4.1%	2.2%	1.5%	10.2%	12.3%	1.8%	0.5%
Utilities	0.0%	0.0%	5.6%	4.9%	1.2%	2.0%	4.9%	2.3%
Financials	19.5%	22.1%	22.5%	23.6%	26.2%	23.6%	8.3%	6.2%
Technology	0.0%	0.0%	2.0%	1.6%	2.8%	4.4%	7.1%	4.8%

Panel B: Post-crisis period

ICB Industrial Segments	Indonesia		Malaysia		Thailand		South Korea	
	Foreign	Local	Foreign	Local	Foreign	Local	Foreign	Local
Oil and Gas	0.0%	1.1%	0.2%	0.9%	4.1%	2.7%	5.1%	1.3%
Basic Materials	21.3%	17.8%	3.0%	5.3%	6.8%	6.2%	10.8%	14.6%
Industrial	10.8%	13.1%	14.9%	23.0%	19.9%	20.7%	19.7%	24.3%
Consumer Goods	28.6%	30.4%	20.8%	19.4%	6.3%	10.0%	14.8%	20.4%
Healthcare	2.6%	3.9%	0.0%	0.0%	0.0%	0.0%	0.1%	4.0%
Consumer Services	9.1%	9.1%	17.6%	15.2%	13.4%	10.1%	4.3%	3.0%
Telecommunications	11.7%	9.8%	2.2%	2.3%	14.8%	10.9%	2.3%	0.9%
Utilities	0.0%	0.0%	9.9%	7.6%	5.6%	2.4%	6.4%	2.7%
Financials	12.4%	11.7%	22.5%	18.5%	21.6%	29.2%	11.6%	9.7%
Technology	0.0%	0.0%	2.6%	1.9%	3.9%	4.5%	9.4%	6.7%

Table 4
Type of recommendations issued by foreign and local analysts
This table presents basic descriptive statistics for the type of recommendations issued in Thailand, Indonesia, Malaysia, and South Korea during the pre-crisis and the post-crisis periods. The pre-crisis period consist of time period between January 1, 1996 and July 1, 1997, while the post-crisis period comprise of time period between September 1, 1998 and December 31, 1999. All strong buy and buy recommendations are characterized as buy recommendations, while all underperform and sell recommendations are labeled as sell recommendations.

Panel A1: Pre-crisis period – Number of each type of recommendation

	Buy		Hold		Sell	
Country	Foreign	Local	Foreign	Local	Foreign	Local
Indonesia	342	76	166	70	220	71
Malaysia	903	879	432	491	457	284
Thailand	585	74	525	67	602	62
South Korea	238	384	153	617	162	348

Panel A2: Pre-crisis period – Percentage of each type of recommendation

	Buy		Hold		Sell	
Country	Foreign	Local	Foreign	Local	Foreign	Local
Indonesia	47.00%	35.00%	22.80%	32.30%	30.20%	32.70%
Malaysia	50.40%	53.10%	24.10%	29.70%	25.50%	17.20%
Thailand	34.20%	36.50%	30.70%	33.00%	35.20%	30.50%
South Korea	43.00%	28.50%	27.70%	45.70%	29.30%	25.80%

Panel B1: Pre-crisis period – Number of each type of recommendation

	Buy		Hold		Sell	
Country	Foreign	Local	Foreign	Local	Foreign	Local
Indonesia	234	226	115	153	112	161
Malaysia	580	902	304	508	277	508
Thailand	443	265	271	121	282	166
South Korea	508	868	263	1212	245	828

Panel B2: Pre-crisis period – Percentage of each type of recommendation

	Buy		Hold		Sell	
Country	Foreign	Local	Foreign	Local	Foreign	Local
Indonesia	50.80%	41.90%	24.90%	28.30%	24.30%	29.80%
Malaysia	50.00%	47.00%	26.20%	26.50%	23.90%	26.50%
Thailand	44.50%	48.00%	27.20%	21.90%	28.30%	30.10%
South Korea	50.00%	29.80%	25.90%	41.70%	24.10%	28.50%

Table 5
Performance of market-adjusted returns following analysts' recommendations – Regression coefficients
This table presents regression coefficients on foreign and local analysts buy and sell recommendations during the pre-crisis and the post-crisis periods as indicated in Equation (1). 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". The pre-crisis period consist of time period between January 1, 1996 and July 1, 1997, while the post-crisis period comprise of time period between September 1, 1998 and December 31, 1999. 1% significance is denoted by ***, 5% by ** and 10% by *.

Panel A: Indonesia

Independent Variables	Dependent Variable				
	First 14 Days	First 28 Days	First 42 Days	First 56 Days	First 112 Days
$Local\_Buy_{S,t,\mathrm{Pre}}$	0.018	0.021	0.007	0.008	-0.097**
$Local\_Sell_{S,t,\mathrm{Pre}}$	0.014	-0.002	-0.012	-0.016	-0.028
$Foreign\_Buy_{S,t,\mathrm{Pre}}$	-0.000	-0.011	-0.025	-0.035*	-0.169***
$Foreign\_Sell_{S,t,\mathrm{Pre}}$	0.013	0.009	-0.004	-0.010	-0.010
$Local\_Buy_{S,t,Post}$	0.008	0.021	0.008	0.039	-0.021
$Local\_Sell_{S,t,Post}$	0.046***	0.058**	0.035	0.068*	0.051
$Foreign\_Buy_{S,t,Post}$	0.011	0.033*	0.023	0.024	-0.064
$Foreign\_Sell_{S,t,Post}$	0.047***	0.042*	0.024	0.056	0.076
Adjusted R^2	0.026	0.030	0.041	0.067	0.107

Panel B: Malaysia

Independent Variables	Dependent Variable				
	First 14 Days	First 28 Days	First 42 Days	First 56 Days	First 112 Days
$Local\_Buy_{S,t,\mathrm{Pre}}$	0.008***	0.014***	0.016***	0.016**	0.007
$Local\_Sell_{S,t,\mathrm{Pre}}$	-0.000	-0.002	-0.006	-0.000	-0.001
$Foreign\_Buy_{S,t,\mathrm{Pre}}$	0.007**	0.008*	0.008	0.011*	0.017
$Foreign\_Sell_{S,t,\mathrm{Pre}}$	-0.003	-0.000	0.006	0.010	0.015
$Local\_Buy_{S,t,Post}$	0.008***	0.013**	0.014**	0.014	0.015
$Local\_Sell_{S,t,Post}$	-0.004	-0.004	-0.002	0.004	-0.009
$Foreign\_Buy_{S,t,Post}$	0.012***	0.019***	0.014*	0.019*	0.021
$Foreign\_Sell_{S,t,Post}$	-0.005	-0.001	-0.003	-0.009	-0.000
Adjusted R^2	0.010	0.016	0.024	0.036	0.057

Panel C: Thailand

Independent Variables	Dependent Variable				
	First 14 Days	First 28 Days	First 42 Days	First 56 Days	First 112 Days
$Local\_Buy_{S,t,\Pr e}$	0.009	-0.02	-0.039*	-0.025	-0.018
$Local\_Sell_{S,t,\Pr e}$	0.012	-0.021	-0.008	-0.009	-0.010
$Foreign\_Buy_{S,t,\Pr e}$	0.011	0.002	0.001	-0.011	0.011
$Foreign\_Sell_{S,t,\Pr e}$	-0.009	-0.001	0.000	-0.022	-0.029
$Local\_Buy_{S,t,Post}$	-0.013	-0.01	-0.008	0.006	-0.020
$Local\_Sell_{S,t,Post}$	0.029*	0.112***	0.154***	0.187***	0.192***
$Foreign\_Buy_{S,t,Post}$	0.010	0.006	0.006	0.012	0.021
$Foreign\_Sell_{S,t,Post}$	0.009	0.027*	0.073***	0.103***	0.095***
Adjusted R^2	0.020	0.033	0.043	0.047	0.054

Panel D: South Korea

Independent Variables	Dependent Variable				
	First 14 Days	First 28 Days	First 42 Days	First 56 Days	First 112 Days
$Local\_Buy_{S,t,\Pr e}$	-0.005	-0.000	0.005	-0.007	0.000
$Local\_Sell_{S,t,\Pr e}$	0.009	0.009	0.001	0.010	0.040*
$Foreign\_Buy_{S,t,\Pr e}$	-0.023***	-0.034***	-0.048***	-0.051***	-0.074***
$Foreign\_Sell_{S,t,\Pr e}$	0.000	-0.032***	-0.042***	-0.008	0.015
$Local\_Buy_{S,t,Post}$	-0.039***	-0.027***	-0.018	-0.033**	-0.010
$Local\_Sell_{S,t,Post}$	0.020***	-0.004	-0.009	0.025	0.039
$Foreign\_Buy_{S,t,Post}$	-0.000	-0.014	-0.021	-0.035**	-0.045*
$Foreign\_Sell_{S,t,Post}$	0.000	0.014	0.005	0.044	0.005
Adjusted R^2	0.080	0.058	0.064	0.069	0.071

Table 6
Performance of market-adjusted returns following analysts' recommendations – Difference between regression coefficients within each period
This table presents difference in regression coefficients on foreign and local analysts buy and sell recommendations during the pre-crisis (January 1, 1996 to July 1, 1997) and the post-crisis periods (September 1, 1998 to December 31, 1999) as indicated in Equation (1). We test the following null hypotheses using the Wald's test:

$$H_0: \beta_1^{\mathrm{Pre},LB} = \beta_2^{\mathrm{Pre},FB} \qquad\qquad H_0: \beta_3^{\mathrm{Pre},LS} = \beta_4^{\mathrm{Pre},FS}$$

$$H_0: \beta_1^{\mathrm{Pre},LB} = \beta_3^{\mathrm{Pre},LS} \qquad\qquad H_0: \beta_2^{\mathrm{Pre},FB} = \beta_4^{\mathrm{Pre},FS}$$

$$H_0: \beta_5^{Post,LB} = \beta_6^{Post,FB} \qquad\qquad H_0: \beta_7^{Post,LS} = \beta_8^{Post,FS}$$

$$H_0: \beta_5^{Post,LB} = \beta_7^{Post,LS} \qquad\qquad H_0: \beta_6^{Post,FB} = \beta_8^{Post,FS}$$

Values that are significant at 10% level are shown as bold.

Panel A1: Indonesia – Pre-crisis period

Lead Days	Foreign Buy – Local Buy		Foreign Sell – Local Sell		Foreign Buy – Foreign Sell		Local Buy – Local Sell	
	Value	F-value	Value	F-value	Value	F-value	Value	F-value
First 14 Days	-0.018	2.52	-0.001	0.00	-0.013	0.63	0.004	0.04
First 28 Days	**-0.032**	**4.38**	0.011	0.61	-0.020	0.82	0.023	0.98
First 42 Days	**-0.032**	**3.77**	0.008	0.25	-0.021	0.73	0.019	0.55
First 56 Days	**-0.043**	**3.94**	0.006	0.08	-0.025	0.70	0.024	0.51
First 112 Days	**-0.072**	**3.88**	0.018	0.25	**-0.159**	**11.61**	-0.069	1.56

Panel A2: Indonesia – Post-crisis period

Lead Days	Foreign Buy – Local Buy		Foreign Sell – Local Sell		Foreign Buy – Foreign Sell		Local Buy – Local Sell	
	Value	F-value	Value	F-value	Value	F-value	Value	F-value
First 14 Days	0.003	0.07	0.001	0.00	-0.036	2.32	**-0.038**	**3.70**
First 28 Days	0.012	0.43	-0.016	0.24	-0.009	0.11	-0.037	1.63
First 42 Days	0.015	0.54	-0.011	0.08	-0.001	0.00	-0.027	0.68
First 56 Days	-0.015	0.34	-0.012	0.05	-0.032	0.47	-0.029	0.50
First 112 Days	-0.043	1.05	0.025	0.11	**-0.140**	**4.51**	-0.072	1.41

Panel B1: Malaysia – Pre-crisis period

Lead Days	Foreign Buy – Local Buy		Foreign Sell – Local Sell		Foreign Buy – Foreign Sell		Local Buy – Local Sell	
	Value	F-value	Value	F-value	Value	F-value	Value	F-value
First 14 Days	-0.001	0.18	-0.003	0.40	**0.010**	**4.08**	0.008	2.57
First 28 Days	-0.006	2.19	0.002	0.11	0.008	1.22	**0.016**	**4.20**
First 42 Days	-0.008	2.22	**0.012**	**2.72**	0.002	0.03	**0.022**	**4.58**
First 56 Days	-0.005	0.77	0.010	1.51	0.001	0.00	0.016	2.00
First 112 Days	0.010	1.10	0.016	1.71	0.002	0.01	0.008	0.26

Panel B2: Malaysia – Post-crisis period

Lead Days	Foreign Buy – Local Buy		Foreign Sell – Local Sell		Foreign Buy – Foreign Sell		Local Buy – Local Sell	
	Value	F-value	Value	F-value	Value	F-value	Value	F-value
First 14 Days	0.004	0.54	-0.001	0.03	**0.017**	**5.78**	**0.012**	**3.51**
First 28 Days	0.006	0.86	0.003	0.09	**0.020**	**4.12**	**0.017**	**3.57**
First 42 Days	0.000	0.00	-0.001	0.01	0.017	1.85	0.016	1.97
First 56 Days	0.005	0.24	-0.013	0.90	**0.028**	**3.07**	0.010	0.39
First 112 Days	0.006	0.12	0.009	0.11	0.021	0.55	0.024	1.06

Panel C1: Thailand – Pre-crisis period

Lead Days	Foreign Buy – Local Buy		Foreign Sell – Local Sell		Foreign Buy – Foreign Sell		Local Buy – Local Sell	
	Value	F-value	Value	F-value	Value	F-value	Value	F-value
First 14 Days	0.002	0.01	-0.021	1.97	**0.020**	**3.28**	-0.003	0.01
First 28 Days	0.022	2.03	0.020	0.68	0.003	0.08	0.001	0.00
First 42 Days	**0.040**	**3.93**	0.008	0.14	0.001	0.00	-0.031	0.95
First 56 Days	0.014	0.33	-0.013	0.27	0.011	0.26	-0.016	0.19
First 112 Days	0.029	0.91	-0.019	0.25	0.040	1.86	-0.008	0.02

Panel C2: Thailand – Post-crisis period

Lead Days	Foreign Buy – Local Buy		Foreign Sell – Local Sell		Foreign Buy – Foreign Sell		Local Buy – Local Sell	
	Value	F-value	Value	F-value	Value	F-value	Value	F-value
First 14 Days	**0.023**	**6.63**	-0.020	1.41	0.001	0.01	**-0.042**	**5.70**
First 28 Days	0.016	1.40	**-0.085**	**6.72**	-0.021	1.25	**-0.122**	**13.18**
First 42 Days	0.014	0.51	**-0.081**	**3.87**	**-0.067**	**6.59**	**-0.162**	**13.78**
First 56 Days	0.006	0.06	**-0.084**	**2.58**	**-0.091**	**8.17**	**-0.181**	**11.00**
First 112 Days	0.041	1.40	-0.097	2.40	**-0.074**	**2.98**	**-0.212**	**10.96**

Panel D1: South Korea – Pre-crisis period

Lead Days	Foreign Buy – Local Buy		Foreign Sell – Local Sell		Foreign Buy – Foreign Sell		Local Buy – Local Sell	
	Value	F-value	Value	F-value	Value	F-value	Value	F-value
First 14 Days	**-0.018**	**5.67**	-0.009	0.74	**-0.023**	**3.59**	-0.014	2.18
First 28 Days	**-0.034**	**10.64**	**-0.041**	**8.05**	-0.002	0.01	-0.009	0.48
First 42 Days	**-0.053**	**18.20**	**-0.043**	**6.91**	-0.006	0.07	0.004	0.04
First 56 Days	**-0.044**	**9.98**	-0.018	0.99	**-0.043**	**3.23**	-0.017	0.77
First 112 Days	**-0.074**	**10.59**	-0.025	0.72	**-0.089**	**4.46**	-0.040	1.64

Panel D2: South Korea – Post-crisis period

Lead Days	Foreign Buy – Local Buy		Foreign Sell – Local Sell		Foreign Buy – Foreign Sell		Local Buy – Local Sell	
	Value	F-value	Value	F-value	Value	F-value	Value	F-value
First 14 Days	**0.039**	**21.67**	-0.020	2.61	0.000	0.01	**-0.059**	**36.09**
First 28 Days	0.013	1.48	0.018	0.78	-0.028	1.63	**-0.023**	**2.99**
First 42 Days	-0.003	0.04	0.014	0.29	-0.026	0.86	-0.009	0.27
First 56 Days	-0.002	0.01	0.019	0.33	**-0.079**	**5.62**	**-0.058**	**6.16**
First 112 Days	-0.035	1.61	-0.034	0.37	-0.050	0.99	-0.049	1.44

Table 7
Performance of market-adjusted returns following analysts' recommendations – Difference between regression coefficients across each period
This table presents difference in regression coefficients on foreign and local analysts buy and sell recommendations across the pre-crisis (January 1, 1996 to July 1, 1997) and the post-crisis periods (September 1, 1998 to December 31, 1999) as indicated in Equation (1). We test the following null hypotheses using the Wald's test:

$$H_0: \beta_1^{\mathrm{Pre},LB} = \beta_5^{Post,LB} \qquad\qquad H_0: \beta_2^{\mathrm{Pre},FB} = \beta_6^{Post,FB}$$

$$H_0: \beta_3^{\mathrm{Pre},LS} = \beta_7^{Post,LS} \qquad\qquad H_0: \beta_3^{\mathrm{Pre},FS} = \beta_8^{Post,FS}$$

Values that are significant at 10% level are shown as bold.

Panel A: Indonesia

Lead Days	(Foreign Buy)$_{Post}$ – (Foreign Buy)$_{Pre}$		(Local Buy)$_{Post}$ – (Local Buy)$_{Pre}$		(Foreign Sell)$_{Post}$ – (Foreign Sell)$_{Pre}$		(Local Sell)$_{Post}$ – (Local Sell)$_{Pre}$	
	Value	F-value	Value	F-value	Value	F-value	Value	F-value
First 14 Days	0.011	1.21	-0.010	0.44	**0.034**	**2.69**	0.032	2.37
First 28 Days	**0.044**	**7.73**	0.000	0.00	0.033	2.04	**0.060**	**4.04**
First 42 Days	**0.048**	**6.67**	0.001	0.00	0.028	0.97	0.047	1.60
First 56 Days	**0.059**	**7.60**	0.031	1.09	**0.066**	**2.77**	**0.084**	**3.17**
First 112 Days	**0.105**	**10.67**	0.076	2.35	0.086	2.48	0.079	1.67

Panel B: Malaysia

Lead Days	(Foreign Buy)$_{Post}$ – (Foreign Buy)$_{Pre}$		(Local Buy)$_{Post}$ – (Local Buy)$_{Pre}$		(Foreign Sell)$_{Post}$ – (Foreign Sell)$_{Pre}$		(Local Sell)$_{Post}$ – (Local Sell)$_{Pre}$	
	Value	F-value	Value	F-value	Value	F-value	Value	F-value
First 14 Days	0.005	0.98	0.000	0.00	-0.002	0.11	-0.004	0.30
First 28 Days	**0.011**	**2.81**	-0.001	0.01	-0.001	0.02	-0.002	0.05
First 42 Days	0.006	0.55	-0.002	0.07	-0.009	0.95	0.004	0.09
First 56 Days	0.008	0.57	-0.002	0.06	-0.019	2.36	0.004	0.13
First 112 Days	0.004	0.06	0.008	0.24	-0.015	0.46	-0.008	0.12

Panel C: Thailand

Lead Days	(Foreign Buy)$_{Post}$ – (Foreign Buy)$_{Pre}$		(Local Buy)$_{Post}$ – (Local Buy)$_{Pre}$		(Foreign Sell)$_{Post}$ – (Foreign Sell)$_{Pre}$		(Local Sell)$_{Post}$ – (Local Sell)$_{Pre}$	
	Value	F-value	Value	F-value	Value	F-value	Value	F-value
First 14 Days	-0.001	0.01	-0.022	2.31	0.018	1.89	0.017	0.70
First 28 Days	0.004	0.07	0.010	0.26	**0.028**	**2.84**	**0.133**	**11.58**
First 42 Days	0.005	0.10	0.031	1.06	**0.073**	**9.72**	**0.162**	**12.89**
First 56 Days	0.023	1.46	0.031	0.88	**0.125**	**19.98**	**0.196**	**12.90**
First 112 Days	0.010	0.12	-0.002	0.00	**0.124**	**11.51**	**0.202**	**9.12**

Panel D: South Korea

Lead Days	(Foreign Buy)$_{Post}$ – (Foreign Buy)$_{Pre}$		(Local Buy)$_{Post}$ – (Local Buy)$_{Pre}$		(Foreign Sell)$_{Post}$ – (Foreign Sell)$_{Pre}$		(Local Sell)$_{Post}$ – (Local Sell)$_{Pre}$	
	Value	F-value	Value	F-value	Value	F-value	Value	F-value
First 14 Days	**0.023**	**6.88**	**-0.034**	**22.42**	0.000	0.00	0.011	1.44
First 28 Days	0.020	2.42	**-0.027**	**9.98**	**0.046**	**4.53**	-0.013	0.94
First 42 Days	**0.027**	**2.89**	**-0.023**	**3.82**	**0.047**	**3.45**	-0.010	0.35
First 56 Days	0.016	0.77	**-0.026**	**3.13**	**0.052**	**2.94**	0.015	0.43
First 112 Days	0.029	0.87	-0.010	0.25	-0.010	0.04	-0.001	0.00

Table 8
Performance of market-adjusted returns following analysts' recommendations – Difference between spreads across each period
This table presents differences between spreads obtained in Table 6 across the pre-crisis and the post-crisis periods. We test the following null hypotheses using the Wald's test:

$$H_0: (\beta_6^{Post,FB} - \beta_5^{Post,LB}) = (\beta_2^{\text{Pre},FB} - \beta_1^{\text{Pre},LB})$$
$$H_0: (\beta_8^{Post,FS} - \beta_7^{Post,LS}) = (\beta_4^{\text{Pre},FS} - \beta_3^{\text{Pre},LS})$$
$$H_0: (\beta_6^{Post,FB} - \beta_8^{Post,FS}) = (\beta_2^{\text{Pre},FB} - \beta_4^{\text{Pre},FS})$$
$$H_0: (\beta_5^{Post,LB} - \beta_7^{Post,LS}) = (\beta_1^{\text{Pre},LB} - \beta_3^{\text{Pre},LS})$$

Values that are significant at 10% level are shown as bold.

Panel A1: Indonesia – Difference between spread within buy and sell recommendations

Lead Days	(Foreign Buy – Local Buy)$_{Post}$ – (Foreign Buy – Local Buy)$_{Pre}$		(Foreign Sell – Local Sell)$_{Post}$ – (Foreign Sell – Local Sell)$_{Pre}$	
	Value	F-value	Value	F-value
First 14 Days	0.021	1.63	0.002	0.00
First 28 Days	**0.044**	**3.52**	-0.027	0.63
First 42 Days	**0.047**	**3.32**	-0.019	0.22
First 56 Days	0.028	0.75	-0.018	0.10
First 112 Days	0.029	0.28	0.007	0.01

Panel A2: Indonesia – Difference between spread between buy and sell recommendations

Lead Days	(Foreign Buy – Foreign Sell)$_{Post}$ – (Foreign Buy – Foreign Sell)$_{Pre}$		(Local Buy – Local Sell)$_{Post}$ – (Local Buy – Local Sell)$_{Pre}$	
	Value	F-value	Value	F-value
First 14 Days	-0.023	0.89	**-0.042**	**3.05**
First 28 Days	0.011	0.17	**-0.060**	**3.23**
First 42 Days	0.020	0.42	-0.046	1.37
First 56 Days	-0.007	0.03	-0.053	1.10
First 112 Days	0.019	0.09	-0.003	0.00

Panel B1: Malaysia – Difference between spread within buy and sell recommendations

Lead Days	(Foreign Buy – Local Buy)$_{Post}$ – (Foreign Buy – Local Buy)$_{Pre}$		(Foreign Sell – Local Sell)$_{Post}$ – (Foreign Sell – Local Sell)$_{Pre}$	
	Value	F-value	Value	F-value
First 14 Days	0.005	0.73	0.002	0.04
First 28 Days	0.012	2.50	0.001	0.00
First 42 Days	0.008	0.73	-0.013	0.95
First 56 Days	0.010	0.76	-0.023	2.08
First 112 Days	-0.004	0.04	-0.007	0.08

Panel B2: Malaysia – Difference between spread between buy and sell recommendations

Lead Days	(Foreign Buy – Foreign Sell)$_{Post}$ – (Foreign Buy – Foreign Sell)$_{Pre}$		(Local Buy – Local Sell)$_{Post}$ – (Local Buy – Local Sell)$_{Pre}$	
	Value	F-value	Value	F-value
First 14 Days	0.007	0.99	0.004	0.31
First 28 Days	0.012	1.72	0.001	0.02
First 42 Days	0.015	1.95	-0.006	0.20
First 56 Days	**0.027**	**3.64**	-0.006	0.25
First 112 Days	0.019	0.59	0.016	0.43

Panel C1: Thailand – Difference between spread within buy and sell recommendations

	(Foreign Buy – Local Buy)$_{Post}$ – (Foreign Buy – Local Buy)$_{Pre}$		(Foreign Sell – Local Sell)$_{Post}$ – (Foreign Sell – Local Sell)$_{Pre}$	
Lead Days	**Value**	**F-value**	**Value**	**F-value**
First 14 Days	0.021	2.06	0.001	0.00
First 28 Days	-0.006	0.12	**-0.105**	**6.78**
First 42 Days	-0.026	0.76	**-0.089**	**3.69**
First 56 Days	-0.008	0.05	-0.071	1.52
First 112 Days	0.012	0.06	-0.078	1.14

Panel C2: Thailand – Difference between spread between buy and sell recommendations

	(Foreign Buy – Foreign Sell)$_{Post}$ – (Foreign Buy – Foreign Sell)$_{Pre}$		(Local Buy – Local Sell)$_{Post}$ – (Local Buy – Local Sell)$_{Pre}$	
Lead Days	**Value**	**F-value**	**Value**	**F-value**
First 14 Days	-0.019	1.96	**-0.039**	**2.86**
First 28 Days	-0.024	2.08	**-0.123**	**8.63**
First 42 Days	**-0.068**	**8.04**	**-0.131**	**6.98**
First 56 Days	**-0.102**	**12.22**	**-0.165**	**7.69**
First 112 Days	**-0.114**	**7.92**	**-0.204**	**7.08**

Panel D1: South Korea – Difference between spread within buy and sell recommendations

	(Foreign Buy – Local Buy)$_{Post}$ – (Foreign Buy – Local Buy)$_{Pre}$		(Foreign Sell – Local Sell)$_{Post}$ – (Foreign Sell – Local Sell)$_{Pre}$	
Lead Days	**Value**	**F-value**	**Value**	**F-value**
First 14 Days	**0.057**	**26.91**	-0.011	0.53
First 28 Days	**0.047**	**10.43**	**0.059**	**5.55**
First 42 Days	**0.050**	**7.68**	**0.057**	**3.41**
First 56 Days	**0.042**	**3.79**	0.037	0.99
First 112 Days	0.039	1.36	-0.009	0.02

Panel D2: South Korea – Difference between spread between buy and sell recommendations

	(Foreign Buy – Foreign Sell)$_{Post}$ – (Foreign Buy – Foreign Sell)$_{Pre}$		(Local Buy – Local Sell)$_{Post}$ – (Local Buy – Local Sell)$_{Pre}$	
Lead Days	**Value**	**F-value**	**Value**	**F-value**
First 14 Days	0.023	2.23	**0.014**	**14.43**
First 28 Days	-0.026	1.18	0.023	0.65
First 42 Days	-0.020	0.52	0.001	0.35
First 56 Days	-0.036	1.06	**0.061**	**2.69**
First 112 Days	0.039	0.47	0.045	0.06

Table 9
Performance of market-adjusted returns following analysts' recommendations in Financial and Industrial sectors – Regression coefficients
This table presents regression coefficients on foreign and local analysts buy and sell recommendations during the pre-crisis and the post-crisis periods as indicated in Equation (1). 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". The pre-crisis period consist of time period between January 1, 1996 and July 1, 1997, while the post-crisis period comprise of time period between September 1, 1998 and December 31, 1999. Panel A1 through Panel D1 represent regression coefficients for the pre-crisis period, and Panel A2 through Panel D2 document regression coefficients for the post-crisis period. 1% significance is denoted by ***, 5% by ** and 10% by *.

Panel A: Financial sector

Independent Variables	Dependent Variable				
	First 14 Days	First 28 Days	First 42 Days	First 56 Days	First 112 Days
$Local\_Buy_{S,t,\mathrm{Pre}}$	-0.030	-0.074*	-0.068	-0.182***	-0.181***
$Local\_Sell_{S,t,\mathrm{Pre}}$	-0.029	-0.076	-0.173***	-0.222***	-0.123
$Foreign\_Buy_{S,t,\mathrm{Pre}}$	-0.013	-0.061	-0.061	-0.179***	-0.133
$Foreign\_Sell_{S,t,\mathrm{Pre}}$	-0.006	-0.001	-0.051	-0.037	0.143*
$Local\_Buy_{S,t,Post}$	-0.033	-0.047	0.034	0.011	-0.012
$Local\_Sell_{S,t,Post}$	0.005	-0.038	0.104*	0.179**	0.580***
$Foreign\_Buy_{S,t,Post}$	-0.015	-0.045	-0.018	-0.048	-0.011
$Foreign\_Sell_{S,t,Post}$	-0.022	-0.043	-0.086	-0.101*	-0.082
Adjusted R^2	0.181	0.113	0.178	0.189	0.314

Panel B: Industrial sector

Independent Variables	Dependent Variable				
	First 14 Days	First 28 Days	First 42 Days	First 56 Days	First 112 Days
$Local\_Buy_{S,t,\mathrm{Pre}}$	0.007	0.019	0.007	0.011	0.066**
$Local\_Sell_{S,t,\mathrm{Pre}}$	-0.015	0.002	-0.016	-0.016	-0.011
$Foreign\_Buy_{S,t,\mathrm{Pre}}$	-0.017	-0.019	-0.055**	-0.065**	-0.055
$Foreign\_Sell_{S,t,\mathrm{Pre}}$	-0.004	-0.015	-0.049**	-0.023	0.004
$Local\_Buy_{S,t,Post}$	-0.034***	-0.02	0.006	-0.037	0.025
$Local\_Sell_{S,t,Post}$	0.037***	-0.025	-0.04	-0.011	-0.059
$Foreign\_Buy_{S,t,Post}$	0.022	-0.004	-0.003	-0.034	-0.058
$Foreign\_Sell_{S,t,Post}$	-0.011	0.087*	0.04	0.141*	0.180
Adjusted R^2	0.127	0.112	0.104	0.1	0.082

Table 10
Performance of market-adjusted returns following analysts' recommendations in Financial and Industrial sectors – Difference between regression coefficients within each period
This table presents difference in regression coefficients on foreign and local analysts buy and sell recommendations in Financial and industrial sectors in South Korea during the pre-crisis (January 1, 1996 to July 1, 1997) and the post-crisis periods (September 1, 1998 to December 31, 1999) as indicated in Equation (1). We test the following null hypotheses using the Wald's test:

$H_0: \beta_1^{Pre,LB} = \beta_2^{Pre,FB}$ $\qquad\qquad$ $H_0: \beta_3^{Pre,LS} = \beta_4^{Pre,FS}$

$H_0: \beta_1^{Pre,LB} = \beta_3^{Pre,LS}$ $\qquad\qquad$ $H_0: \beta_2^{Pre,FB} = \beta_4^{Pre,FS}$

$H_0: \beta_5^{Post,LB} = \beta_6^{Post,FB}$ $\qquad\qquad$ $H_0: \beta_7^{Post,LS} = \beta_8^{Post,FS}$

$H_0: \beta_5^{Post,LB} = \beta_7^{Post,LS}$ $\qquad\qquad$ $H_0: \beta_6^{Post,FB} = \beta_8^{Post,FS}$

Values that are significant at 10% level are shown as bold.

Panel A1: Financial sector – Pre-crisis period

	Foreign Buy – Local Buy		Foreign Sell – Local Sell		Foreign Buy – Foreign Sell		Local Buy – Local Sell	
Lead Days	Value	F-value	Value	F-value	Value	F-value	Value	F-value
First 14 Days	0.017	0.47	0.023	1.04	-0.007	0.04	-0.001	0.00
First 28 Days	0.013	0.13	0.075	1.79	-0.060	0.65	0.002	0.00
First 42 Days	0.007	0.02	0.122	2.51	-0.010	0.01	0.105	1.42
First 56 Days	0.003	0.00	**0.185**	**6.97**	-0.142	2.36	0.040	0.27
First 112 Days	0.048	0.26	**0.266**	**5.18**	**-0.276**	**3.69**	-0.058	0.17

Panel A2: Financial sector – Post-crisis period

	Foreign Buy – Local Buy		Foreign Sell – Local Sell		Foreign Buy – Foreign Sell		Local Buy – Local Sell	
Lead Days	Value	F-value	Value	F-value	Value	F-value	Value	F-value
First 14 Days	0.018	0.62	-0.027	0.59	0.007	0.03	-0.022	1.89
First 28 Days	0.002	0.01	-0.005	0.01	-0.002	0.00	-0.043	0.06
First 42 Days	-0.052	1.60	**-0.190**	**5.75**	0.068	0.72	-0.086	1.57
First 56 Days	-0.059	0.83	**-0.280**	**8.37**	0.053	0.41	-0.101	1.99
First 112 Days	0.001	0.00	**-0.662**	**12.58**	0.071	0.24	**-0.082**	**7.56**

Panel B1: Industrial sector – Pre-crisis period

	Foreign Buy – Local Buy		Foreign Sell – Local Sell		Foreign Buy – Foreign Sell		Local Buy – Local Sell	
Lead Days	Value	F-value	Value	F-value	Value	F-value	Value	F-value
First 14 Days	**-0.024**	**4.16**	0.011	0.32	-0.013	0.30	0.022	1.68
First 28 Days	**-0.038**	**4.64**	-0.017	0.57	-0.004	0.02	0.017	0.48
First 42 Days	**-0.062**	**9.15**	-0.033	1.97	-0.006	0.03	0.023	0.60
First 56 Days	**-0.076**	**9.64**	-0.007	0.08	-0.042	0.97	0.027	0.63
First 112 Days	**-0.121**	**10.52**	0.015	0.13	-0.059	0.79	0.077	2.01

Panel B2: Industrial sector – post-crisis period

	Foreign Buy – Local Buy		Foreign Sell – Local Sell		Foreign Buy – Foreign Sell		Local Buy – Local Sell	
Lead Days	Value	F-value	Value	F-value	Value	F-value	Value	F-value
First 14 Days	**0.056**	**13.60**	**-0.048**	**3.82**	0.033	1.62	**-0.011**	**15.85**
First 28 Days	0.016	0.48	**0.112**	**4.08**	-0.091	2.32	0.087	0.05
First 42 Days	-0.009	0.09	0.080	1.89	-0.043	0.48	0.040	1.93
First 56 Days	0.003	0.01	**0.152**	**3.33**	**-0.175**	**4.05**	0.141	0.44
First 112 Days	-0.083	2.53	**0.239**	**3.41**	**-0.238**	**3.70**	0.180	1.83

Table 11

Performance of market-adjusted returns following analysts' recommendations – Difference between regression coefficients across each period

This table presents difference in regression coefficients on foreign and local analysts buy and sell recommendations across the pre-crisis (January 1, 1996 to July 1, 1997) and the post-crisis periods (September 1, 1998 to December 31, 1999) as indicated in Equation (1). We test the following null hypotheses using the Wald's test:

$$H_0: \beta_1^{\mathrm{Pre},LB} = \beta_5^{Post,LB} \qquad\qquad H_0: \beta_2^{\mathrm{Pre},FB} = \beta_6^{Post,FB}$$

$$H_0: \beta_3^{\mathrm{Pre},LS} = \beta_7^{Post,LS} \qquad\qquad H_0: \beta_3^{\mathrm{Pre},FS} = \beta_8^{Post,FS}$$

Values that are significant at 10% level are shown as bold.

Panel A: Financial sector

Lead Days	(Foreign Buy)$_{Post}$ – (Foreign Buy)$_{Pre}$		(Local Buy)$_{Post}$ – (Local Buy)$_{Pre}$		(Foreign Sell)$_{Post}$ – (Foreign Sell)$_{Pre}$		(Local Sell)$_{Post}$ – (Local Sell)$_{Pre}$	
	Value	F-value	Value	F-value	Value	F-value	Value	F-value
First 14 Days	-0.002	0.01	-0.003	0.01	-0.016	0.18	0.034	1.82
First 28 Days	0.016	0.15	0.027	0.82	-0.042	0.54	0.038	0.37
First 42 Days	0.043	0.70	**0.102**	**5.16**	-0.035	0.18	**0.277**	**7.47**
First 56 Days	**0.131**	**4.18**	**0.193**	**7.44**	-0.064	0.72	**0.401**	**16.26**
First 112 Days	0.122	1.19	**0.169**	**3.94**	**-0.225**	**3.17**	**0.703**	**12.99**

Panel B: Industrial sector

Lead Days	(Foreign Buy)$_{Post}$ – (Foreign Buy)$_{Pre}$		(Local Buy)$_{Post}$ – (Local Buy)$_{Pre}$		(Foreign Sell)$_{Post}$ – (Foreign Sell)$_{Pre}$		(Local Sell)$_{Post}$ – (Local Sell)$_{Pre}$	
	Value	F-value	Value	F-value	Value	F-value	Value	F-value
First 14 Days	**0.039**	**6.51**	**-0.041**	**11.36**	-0.007	0.07	**0.052**	**8.43**
First 28 Days	0.015	0.39	**-0.039**	**5.39**	**0.102**	**3.49**	-0.027	1.36
First 42 Days	**0.052**	**2.84**	-0.001	0.00	**0.089**	**2.65**	-0.024	0.66
First 56 Days	0.031	0.70	**-0.048**	**3.78**	**0.164**	**4.56**	0.005	0.02
First 112 Days	-0.003	0.00	-0.041	0.95	0.176	2.36	-0.048	0.42

Table 12
Performance of market-adjusted returns following analysts' recommendations in Financial and Industrial sectors – Difference between spreads across each period
This table presents differences between spreads obtained in Table 10 across the pre-crisis and the post-crisis periods. We test the following null hypotheses using Wald's test:

$$H_0: (\beta_6^{Post,FB} - \beta_5^{Post,LB}) = (\beta_2^{\Pr e,FB} - \beta_1^{\Pr e,LB})$$

$$H_0: (\beta_8^{Post,FS} - \beta_7^{Post,LS}) = (\beta_4^{\Pr e,FS} - \beta_3^{\Pr e,LS})$$

$$H_0: (\beta_6^{Post,FB} - \beta_8^{Post,FS}) = (\beta_2^{\Pr e,FB} - \beta_4^{\Pr e,FS})$$

$$H_0: (\beta_5^{Post,LB} - \beta_7^{Post,LS}) = (\beta_1^{\Pr e,LB} - \beta_3^{\Pr e,LS})$$

Values that are significant at 10% level are shown as bold.

Panel A1: Financial Sector – Difference between spread within buy and sell recommendations

Lead Days	(Foreign Buy – Local Buy)$_{Pre-Crisis}$ – (Foreign Buy – Local Buy)$_{Post-Crisis}$		(Foreign Sell – Local Sell)$_{Pre-Crisis}$ – (Foreign Sell – Local Sell)$_{Post-Crisis}$	
	Value	F-value	Value	F-value
First 14 Days	-0.001	0.00	0.050	1.40
First 28 Days	0.011	0.06	0.080	1.16
First 42 Days	0.059	0.93	**0.312**	**8.20**
First 56 Days	0.062	0.54	**0.465**	**13.88**
First 112 Days	0.047	0.13	**0.928**	**15.62**

Panel A2: Financial Sector – Difference between spread between buy and sell recommendations

Lead Days	(Foreign Buy – Foreign Sell)$_{Pre-Crisis}$ – (Foreign Buy – Foreign Sell)$_{Post-Crisis}$		(Local Buy – Local Sell)$_{Pre-Crisis}$ – (Local Buy – Local Sell)$_{Post-Crisis}$	
	Value	F-value	Value	F-value
First 14 Days	-0.014	0.10	0.021	1.37
First 28 Days	-0.058	0.73	0.045	0.03
First 42 Days	-0.078	0.76	**0.191**	**2.94**
First 56 Days	**-0.195**	**4.39**	0.141	**3.34**
First 112 Days	**-0.347**	**5.03**	0.024	**6.55**

Panel B1: South Korea – Difference between spread within buy and sell recommendations

Lead Days	(Foreign Buy – Local Buy)$_{Pre-Crisis}$ – (Foreign Buy – Local Buy)$_{Post-Crisis}$		(Foreign Sell – Local Sell)$_{Pre-Crisis}$ – (Foreign Sell – Local Sell)$_{Post-Crisis}$	
	Value	F-value	Value	F-value
First 14 Days	**-0.080**	**18.23**	0.059	**3.60**
First 28 Days	**-0.054**	**3.57**	-0.129	**4.93**
First 42 Days	-0.053	2.16	-0.113	**3.32**
First 56 Days	**-0.079**	**3.70**	-0.159	**3.51**
First 112 Days	-0.038	0.36	-0.224	**2.71**

Panel B2: South Korea – Difference between spread between buy and sell recommendations

Lead Days	(Foreign Buy – Foreign Sell)$_{Pre-Crisis}$ – (Foreign Buy – Foreign Sell)$_{Post-Crisis}$		(Local Buy – Local Sell)$_{Pre-Crisis}$ – (Local Buy – Local Sell)$_{Post-Crisis}$	
	Value	F-value	Value	F-value
First 14 Days	-0.046	2.38	**0.033**	**19.88**
First 28 Days	0.087	2.17	-0.070	0.19
First 42 Days	0.037	0.37	-0.017	0.49
First 56 Days	0.133	2.55	-0.114	1.68
First 112 Days	0.179	2.09	-0.103	0.01

Information, optimism or influence: What determines relative performance of foreign and local analysts during the crisis period? Evidence from an emerging market

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Abstract

This paper investigates the competing hypotheses that are put forward to explain the asymmetric performance of foreign and local analysts' stock recommendations during the crisis period in the emerging stock markets. Our results indicate that foreign analysts' buy recommendations and local analysts' sell recommendations are more influential than their counterpart recommendations. This is why foreign analysts' buy recommendations outperform local analysts' buy recommendations while the opposite holds for sell recommendations. Our results show no support for the claim that the over optimism in local analysts' recommendations explains the relative performance nor that the difference in the ability of foreign and local analysts to pick out firms that are relatively less affected and firms that are relatively more affected by the crisis is what explains the asymmetric performance of foreign and local analysts' recommendations.

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1. Introduction

Prior literature has produced contradicting results on the relative performance of foreign and local analysts. The stream of literature that documents superiority of local analysts maintains that "the ability of local analysts to make house calls rather than conference calls, during which time they can meet CEOs face-to-face and survey the firm's operations directly, provides them with an opportunity to obtain valuable private information" (Malloy, 2005). Geographic proximity of these analysts with the firms, thus, allows information gathering that results in information superior in quality to information gathered by geographically distant analysts. However, a competing strand of literature argues that due to their access to better resources, broader expertise, and greater talent, foreign analysts[39] outperform their geographically proximate local counterparts (Higgins, 2002; Bacmann and Bolliger, 2001). Better resources and greater talent, therefore, converts available information into more valuable forecasts and recommendations.

However, a more recent strand of literature contests the earlier claims of complete information advantage of either foreign or local analysts. Lai and Teo (2006) and Farooq (2006) report asymmetry in the performance of foreign and local analysts by documenting superiority of foreign analysts' buy and local analysts' sell recommendations over their counterpart recommendations (i.e. local analysts' buy recommendations and foreign analysts' sell recommendations respectively) in the emerging stock markets. We argue that usual information centric arguments that hold analysts' ability to acquire better quality information (i.e. main argument in favor of local analyst advantage) or their ability to process given information more efficiently (i.e. main argument in favor of foreign analyst advantage) cannot explain this asymmetry in the performance of foreign and local analysts. For information centric arguments to hold, the group with access to better information should issue better sell as well as buy recommendations.

In this paper, we depart from the earlier information centric arguments regarding relative performance of foreign and local analysts and propose that analysts' ability to influence investors, especially during the periods of extreme uncertainties, can explain their relative performance during those periods better than

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[39] In the context of our paper, most of the foreign analysts work for brokerage houses from developed countries. These brokerage houses usually have better resources and bigger international network.

the information centric arguments. Using the analysts' recommendations and investors' trading data from South Korea, we show that foreign analysts' buy recommendations and local analysts' sell recommendations are more influential than their counterpart recommendations during the financial crisis of 1997-98. [40] Our results show that foreign analysts' buy and local analysts' sell recommendations generate significantly more subsequent buying and selling trades than their respective counterpart recommendations. We also show that that this trade generating ability of foreign analysts' buy and local analysts' sell recommendations is not due to the fact that these recommendations possess more information than their respective counterpart recommendations. Instead, the reason seems to lay in the increased influence that these recommendations have on certain investor groups during the periods of extreme uncertainty. Foreign investors [41], being risk averse, are more inclined to buy those stocks where they have outside analysts to blame if their investment turns out to be a failure. In contrast their selling decisions are usually governed by the Principals' requirements, which can simply force them to exit foreign stocks irrespective of analysts' recommendations during a period of crisis. [42] We thus hypothesize that it is probably not the information contents in analysts' recommendations, but their ability to influence investors, for various reasons described later, to undertake certain type of trade, which is responsible for asymmetric performance of foreign and local analysts' recommendations as reported in Farooq (2006). Our explanation is consistent with the previous literature that shows that buying and selling pressures, i.e. demand and supply shocks, has a strong impact on stock prices and returns (Gompers and Metrick, 2001).

We show that foreign analysts' buy recommendations produce significantly more subsequent buying than local analysts' buy recommendations over a period of approximately six weeks following the issuance of recommendation during the financial crisis of 1997-98. Our results show that foreign analysts' buy recommendations generate significant buying from foreign investors. The buying trend of foreign investors is persistent and increasing over time. While, local analysts' buy recommendations, apart from generating significant buying from local

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[40] The reason behind choosing South Korea for this study is due to the easy availability of the required data. South Korean data allows us to differentiate between trades made by different groups of investor.
[41] Most of the foreign investors in the Asian emerging markets are foreign institutions.
[42] Prior literature documents that large depreciation of currency and decline in equity prices in crisis-hit countries caused foreign investors to incur large capital losses and may have induced them to sell of their stock holdings for rebalancing their assets irrespective of analysts' recommendations.

institutional investors, generate significant selling from local individual investors (the biggest group of investors in the Korea Stock Exchange). No significant selling is observed in response to foreign analysts' buy recommendations. Consistent with the prior literature (Clark and Berko, 1997; Froot et al., 2001), we argue that significant buying from foreign investors in response to foreign analysts' buy recommendations has a positive impact on prices, thereby increasing their prices more than local analysts' buy recommended stocks that generate significant selling from the biggest group of investors, i.e. local individual investors. As a result of this, foreign analysts' buy recommendations will outperform local analysts' buy recommendations.

Our results also show that foreign analysts' sell recommendations generate no significant selling from any group of investor except from local institutional investors who engage in significant selling on the first two days of trading during post-recommendation period. However, local analysts' sell recommendations generate significant post-recommendation selling over a period of approximately six weeks from local institutional investors during our sample period. The selling pattern of local institutional investors appears to be persistent and increasing over time indicating that local institutional investors gradually increase their selling in response to local analysts' sell recommendations. We argue that significant and persistent selling from local institutional investors following local analysts' sell recommendations has a negative impact on prices during the crisis period, thereby decreasing their prices more than the stock that are recommended as sell by foreign analysts. As a result of this, local analysts' sell recommendations will outperform foreign analysts' sell recommendations.

Our explanation differs from the competing information centric arguments that hold the optimism or the asymmetric ability of foreign and local analysts to pick out firms that are relatively less or more affected by the crisis as the main reason for the asymmetric performance of foreign compared to local analysts. Lai and Teo (2006) argue that the asymmetry in the performance of foreign and local analysts' buy and sell recommendations is due to the fact that local analysts are overly optimistic in their recommendations. Because local analysts are more eager to issue buy recommendations, a buy recommendation issued by a local analyst carries less weight than a more carefully issued recommendation by a foreign analyst. For sell recommendations, they suggest that local analysts' optimism would produce the opposite results. Since local analysts are more reluctant to issue sell recommendations

as compared to foreign analysts, their sell recommendations tend to be better justified than foreign analysts' sell recommendations. Lai and Teo (2006) argue that this is the main reason why foreign analysts' buy recommendations outperform local analysts' buy recommendations, while local analysts' sell recommendations outperform foreign analysts' sell recommendations. However, our results show that there is no significant difference in the optimism between foreign and local analysts during our sample period. Similarly, the arguments that hold asymmetric ability of foreign and local analysts in identifying the firms that are relatively less affected and the firms that are relatively more affected by the crisis as the main reason behind the asymmetric performance of foreign and local analysts are also not supported by our data in our sample period. These arguments maintain that geographically proximate local analysts were better placed to access the firms that suffered the most during the crisis (i.e. firms with poor governance mechanisms such as banks), while foreign analysts were better equipped to recommend the firms that suffered relatively less from the crisis (i.e. firms with exports as the main source of revenues and profits such as firms belonging to electronics, computers, and automobiles sectors).

Our findings regarding optimism and analysts' asymmetric ability to identify firms that are relatively less or relatively more affected by the crisis will imply that there should be no difference in the performance of foreign and local analysts' recommendations in our sample period. However, Farooq (2006) reports that foreign analysts' buy recommendations and local analysts' sell recommendations significantly outperform their counterpart recommendations in South Korea during the financial crisis of 1997-98. Therefore, it seems that it is not optimism or analysts' asymmetric ability to pick out firms that are relatively less affected and firms that are relatively more affected by the crisis, but the ability of foreign analysts' buy recommendations and local analysts' sell recommendations to influence foreign and local investors respectively and generate significant subsequent buying and selling that is responsible for the results obtained in Farooq (2006). Significant buying (selling) in response to foreign (local) analysts' buy (sell) recommendations has a strong impact on prices and leads to increasing (decreasing) of prices of foreign (local) analysts' buy (sell) recommended stocks more than local (foreign) analysts' buy (sell) recommended stocks. As a result of which foreign analysts' buy and local analysts' sell recommendations outperform their counterpart recommendations.

The remainder of the paper will proceed as follows: Section 2 presents the motivation and background for this paper. Section 3 documents the data used in this study as well as an exploration of summary statistics. Section 4 reports the results of our empirical tests. The paper ends with Section 5 where we present conclusions.

2. Motivation and background

2.1. Analyst influence and the relative performance of foreign and local analysts

The traditional literature on "prudent-man rule" and institutional investment suggests that institutional investors base their investment decisions on the fiduciary responsibilities that accompany while handling clients' funds. [43] Since the performance and investment choices of institutional investors are continually monitored and evaluated, they tend to make sure that their investment decisions are not only practically sound, but are also regarded by others as reasonable, well-informed, and prudent decisions (Badrinath et al., 1989). Furthermore, the law also lays down several constraints, including severe penalties in case of irresponsible investment behavior by institutional investors. Managers have to explain their decisions if their investment decision turn out to be bad. Curzio (1987) mentions that "…if a fund manager invests $10 million in a B- stock and it collapse, he may very well risk his job. If the $10 million was invested in B+ or higher rated stock, and it collapsed, his investment was justified".

The need to be prudent becomes more significant during the times of extreme economic uncertainty, i.e. during the crisis period. However, during such times, a safety-net may be provided to managers if they can demonstrate that their assessment regarding the soundness of a particular investment choice was shared by others. Badrinath et al. (1989) document that levels of institutional holdings is indeed an increasing function of the safety-net potential of a particular stock. We argue that foreign institutional investors (henceforth foreign investors), being more prone to monitoring and subsequent legal penalties, are the ones who show more prudent investment behavior if countries they are investing in experience crisis. As a result, they may base their investment decisions on the recommendations of financial

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[43] The Prudent-man Rule requires that each investment be judged on its own merits. Under this rule, the fiduciary is required to invest assets as a "prudent-man", keeping in mind the needs of the beneficiaries.

analysts, who are considered to be more informed. By basing their investment on analysts' recommendations, foreign investors can effectively justify their decisions ex-post, in case any of their decisions lead to much worse performance than the relevant benchmark. However, we expect them to base their buy or hold decisions more than their sell decisions on analysts' recommendations. Sell decisions may be more governed by the Principal's requirements, who can simply force investment managers to exit the stocks irrespective of analysts' recommendations during the periods of crisis. Prior literature documents that large depreciation of currency and decline in equity prices in crisis-hit countries caused foreign investors to incur large capital losses. These losses may have induced foreign investors to sell their holdings for rebalancing their assets irrespective of analysts' recommendations.[44] Therefore, it is reasonable for us to imply that foreign analysts, who are more accessible to foreign investors, are able to influence foreign investors' trade more with their buy recommendations than with their sell recommendations during a period of crisis.

On the other hand, given their personal relationships with firms, it is relatively hard for local institutional investors to exit the firms' stocks during the crisis period (i.e. time period when the firms need them the most) in comparison to foreign investors (Rajan and Zingales, 1998).[45] This reluctance to exit the firms' stocks may be compounded by the fact that local institutional investors in the Asian markets face lesser legal penalties as compared to their foreign counterparts incase of any imprudent investment behavior. It implies that we may expect local institutional investors to sell out only when it is absolutely sure that the firm will perform badly and local analysts' sell recommendations provide good indication about the firms that are expected to perform badly. Therefore, there is higher possibility that local institutional investors base their sell trade more than their buy trade on analysts' recommendations. Given that local analysts are more accessible to local institutional investors, we argue that local analysts' sell recommendations can generate more trade from local institutional investors than their buy recommendations during a period of crisis.

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[44] The net foreign equity portfolio investment in South Korea during July 97 to December 97 was negative (Source: The Bank of Korea).
[45] Rajan and Zingales (1998) document the reasons why it was hard for local investors to pull out their money during a period of lack luster firm performance. They argue that local institutional investors used to get above market rate of returns from the firms during periods when the firm was performing well, and in turn they would help firm by providing capital with below market rate during periods when the firm was performing bad.

Furthermore, prior literature on the Asian financial crisis of 1997-98 suggests that foreign investors were net buyers and local investors were net sellers. For example, Stultz et al. (2005), while studying South Korea, document that foreign investors had positive net inflows, while local investors had negative net inflows during the crisis period. Similarly, Kamesaka and Wang (2004a) and Vimilsiri (2001) document similar findings for Indonesia and for Thailand respectively. These observations also indicate that foreign analysts' buy recommendations and local analysts' sell recommendations were more influential in generating subsequent trade during the period of crisis.

The ability of foreign analysts' buy recommendations and local analysts' sell recommendations to generate significant trade is not of much interest, if it has no implications for returns. Consistent with the prior literature, we argue that there is a strong link between trading and subsequent stock returns. Froot et al. (2001) study foreign inflows in emerging stock markets and show that local stock prices are sensitive to foreign investors' inflows. They document that inflows have a positive impact on future stock returns. One of the explanations, amongst numerous others, put forward to explain the relationship between foreign investors' inflows and subsequent stock returns is that foreign investors, most of them being big financial institutions, usually have huge sums of money to invest in a smaller number of stocks. By moving huge sums of money in a small number of stocks, they are able to increase the demand and thus can affect the stock prices significantly (Liu et al., 1990; Ferreira and Smith, 1999). Gompers and Metrick (2001) study equity holdings of large institutions from 1980 to 1996 and document that demand shocks generated by the large institutional investors can explain nearly 50 percent of increase in the price of large firms' stocks relative to small firms' stocks. The relationship between foreign investors' trading and the subsequent stock returns is not confined to tranquil periods alone; in fact, it has shown to persist even during the periods of economy wide crisis. Kamesaka and Wang (2004b) analyze Thai stock market during the crisis period and document that foreign investors' buying resulted in significant positive returns as compared to local buying. Clark and Berko (1997) examine Mexican stock market during the late 1980s through the crisis in 1993 and document that unexpected inflows of 1% of the market's capitalization drive prices up by 13%.

Similarly, we argue that any significant outflows should have negative impact on stock prices and returns. Chan and Lakonishok (1995) analyze the trades of 37

large investment management firms in the USA and document average price change of negative 0.35 percent for sells due to these trade. Consistent with the above arguments, we claim that the supply shocks generated due to withdrawal of significant sums of money from the equity market by institutional investors is the reason for this price decline.

Some researchers argue that this permanent effect on prices might be due to the fact that institutional investors trade on information that is not already incorporated in the market. This explanation does hold an intuitive appeal, but a number of empirical studies, especially those on the compositional changes in the S&P 500 index, argue that not all of the price impact is attributed to information (Garry and Goetzmann, 1986; Shleifer, 1986; Harris and Gurel, 1986; Dhillon and Johnson, 1991; Beneish and Whaley, 1996; Lynch and Mendenhall, 1997). This strand of literature illustrates that the price impact of institutional investors' trade is due to supply and demand shocks that are created due to these trades. The inclusion of a stock in the S&P 500 index immediately creates a demand for that stock, which eventually translates into permanent price increase. Since Standard & Poors adds a stock to the S&P 500 index solely based on public information no new information is conveyed to the market participants about the true value of stock when a stock is added in the index. For information related arguments to hold, we should expect no or a small and transitory price impact. However, we do see a price impact that is permanent rather than transitory. More recently, Goetzmann and Massa (2003) examined how changing demand for a specific portfolio, i.e. the S&P 500, relates to its price dynamics on a daily and an intraday level. They find evidence of a strong same-day relationship between demand for index fund shares and the movement of the S&P 500. They test and reject the hypothesis that this contemporaneous effect results from trend following and find little evidence of trend following at the daily level. They find a significant positive correlation of inflows and contemporaneous returns and a significant negative correlation between outflows and contemporaneous returns. They also document that this effect is permanent rather than transitory. The reason for the permanent effect of supply and demand shocks is that if there are insufficient close substitutes for a particular firm's stock, a seller might be faced with a downward-sloping demand curve, which will necessitate discount in stock price for the transaction to take place. Likewise, a buyer might be faced with an upward-sloping supply curve, which will mean that for the large transaction to occur a

premium will be necessary. This explanation predicts a permanent price effect or at least a slower price rebound.

Given that investors' trading produce such a huge impact on prices, we argue that relative performance of foreign and local analysts' recommendations can be partly explained by the impact that their recommendations have on the trading of investors. We have already argued that foreign analysts' buy recommendations and local analysts' sell recommendations have greater ability to influence investors than their counterpart recommendations (i.e. local analysts' buy recommendations and foreign analysts' sell recommendations) during the periods of crisis. This ability of recommendations to generate trade eventually leads to their superior performance relative to their counterpart recommendations.

2.2. Optimism and asymmetric ability of informativeness: Alternate explanations for the relative performance of foreign and local analysts

Prior literature points out a number of competing explanations for the asymmetric performance of foreign and local analysts' buy and sell recommendations. For example, Lai and Teo (2006) argue that superior performance of foreign analysts buy and local analysts' sell recommendations relative to their counterpart recommendations is due to optimism in local analysts' recommendations. Because local analysts are more eager to issue buy recommendations, local analysts' buy recommendations contain less positive information than foreign analysts' buy recommendations. Lai and Teo (2006) argue that for this reason, foreign analysts' buy recommendations outperform local analysts' buy recommendations. They also suggest that due to local analysts' higher reluctance to issue sell recommendations as compared to foreign analysts, sell recommendations by local analysts contain more negative information than foreign analysts' sell recommendations. They conclude that this is the main reason why local analysts' sell recommendations outperform foreign analysts' sell recommendations.

Another argument that may explain the superior performance of foreign analysts' buy and local analysts' sell recommendations is the asymmetric ability of foreign and local analysts in uncovering the firms that are relatively less affected and the firms that are relatively more affected by the crisis. For example, prior literature documents that organizational characteristics, such as inefficient governance

mechanisms, were responsible for the poor performance of firms during the crisis period. Johnson et al. (2000) suggest that governance mechanisms explain the extent of Asian financial crisis more than traditional macroeconomic variables. Using data of 25 emerging markets, they show that measures of corporate governance explain the stock market performance better than macroeconomic measures. Similarly, Mitton (2002) analyzes data from Indonesia, Malaysia, Thailand, South Korea and Philippines and concludes that firm-level differences in variables related to corporate governance had a strong impact on firm performance during the Asian financial crisis. Since local analysts are better placed to assess firms' organizational weaknesses, it may be possible that local analysts are able to issue superior sell recommendations during the crisis period.

Similarly, extant evidence suggests the presence of a number of firms in the Asian emerging markets that have exports as the major source of revenues and profits.[46] It is intuitive to suggest that firms having increased reliance on foreign markets are less prone to be affected by the local economic conditions and therefore are the ones that may have been less affected by the Asian financial crisis of 1997-98. Foreign analysts could be better placed than their local counterparts to recommend such firms. For such firms, having better information about firms' customers and demand for individual firm's products could be more valuable information than locally held insider information. Foreign analysts, belonging to brokerage houses with greater international networks, are naturally the ones that can gather information about such firms much more efficiently than local analysts. Therefore, there is no a priori reason to think that geographic proximity with such firm's head-office is any more important that having better information about such firm's customers and demand of its products.[47] Hence, it may be possible that it is foreign analysts who issue superior buy recommendations during the crisis period. Arguments supporting

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[46] Most of these export-oriented firms belong to computer, electronics, semiconductors, and automobile manufacturers. These firms earn bulk of their revenues from abroad. For example, computer/electronic manufacturers in Taiwan exported 74 percent of their product to the West and the US in 2000. Similarly, the top four South Korean automobile manufacturers exported 76% of their output in 2004. Another example for such firms can be Samsung which is the largest manufacturer and exporter of DRAMS (memory chips for computers).

[47] Bacmann and Bolliger (2001) report that foreign analysts outperformed local analysts in Mexico. Mexio is a country which exports more than 85% of its products to the US. Therefore, one of the explanations for superior performance of foreign analysts in Mexico is that the US analysts are better in predicting the demand of Mexican products and hence the performance of the Mexican firms relative to their local counterparts.

this hypothesis are provided by Seasholes (2004), where he shows that foreign investors outperform locals when trading certain types of stocks.

3. Data

We choose South Korea for this study due to the availability of the data that allows us to differentiate between trades made by different investor groups, and thus allows us to examine each investor group's trade reaction to analysts' recommendations. The sample period for this study is from July 2, 1997 to August 31, 1998 (Mitton, 2002).[48]

3.1. Classification of analysts

Analysts are classified as foreign or local based on the country of origin of the brokerage houses that employ them. Analysts working for local brokerage houses are classified as local analysts, while analysts working for foreign brokerage houses are classified as foreign analysts.[49] Brokerage houses are classified as local or foreign depending on two conditions: (1) location of their head-office and (2) presence in the local country, i.e. South Korea in our case. All brokerage houses with head-offices in South Korea are classified as local. While, brokerage houses with head-offices located outside South Korea and having no local presence in South Korea are classified as foreign. We obtain information about location of head-offices of brokerage houses from brokerage houses' websites and www.business.com.

It was difficult to know if brokerage houses had local presence or not during the time of crisis. Websites of brokerage houses, stock exchanges, or security exchange commissions do not provide much information on that. We, however, used

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[48] The beginning of the crisis period corresponds to the devaluation of the Thai baht on July 2, 1997. Most of the literature on Southeast Asian financial crisis considers devaluation of the Thai baht as a starting point of the crisis. July 2, 1997 also corresponds to the date when stock markets of all four crisis hit countries, i.e. Indonesia, Malaysia, Thailand, and South Korea began their downward movement together. The ending point of the crisis period corresponds with the date on which all of the crisis hit stock markets began a sustained upward movement.
[49] We recognize the importance of personal characteristics of analysts in determining their performance, but for this study we have deliberately ignored them. Prior literature also documents that personal characteristics of analysts are of lesser importance in Asian markets as compared to Western markets (Fuchita, 2005). We believe that classification based on brokerage houses will allow us to differentiate analysts in a better way, because local brokerage houses are better placed to provide their analysts a channel to develop those personal relationships and networks that are so important in Asian markets.

the information provided in I/B/E/S Detail International History-Recommendation file to separate out those brokerage houses that had local presence from those that did not have local presence during crisis period. I/B/E/S file assigns unique code to each of the contributing brokerage house. Brokerage houses having several subsidiaries have separate code for each subsidiary. For example, J. P. Morgan operates across the globe having subsidiaries in all parts of the world. I/B/E/S assigns unique code to each of its subsidiary. We exploit this property of I/B/E/S data to find out which brokerage house had local presence and which did not have local presence during crisis period. Basic assumption that we make in this process is that if a brokerage house has a local presence, it should issue largest number of its recommendations for firms located in that country. Therefore, if a brokerage house issues the largest number of its recommendations for stocks in country x, we classify it as having local presence in country x.

Table 1 presents descriptive statistics for foreign and local brokerage houses in our sample. It is noteworthy to mention that South Korea attracted substantial interest from foreign brokerage houses during the time of crisis. The number of foreign brokerage houses in fact exceeded the number of local brokerage houses.

[Insert Table 1 here]

3.2. Trading data

The Korea Stock Exchange provided daily trading data for the firms listed on the Exchange. The Korean data allows us to distinguish trades by investor type, and thereby examine their trade reactions to analyst recommendations. The exchange classifies investors as (1) securities companies, (2) insurance companies, (3) investment trusts, (4) banks, (5) other finance companies, (6) funds, (7) local individual investors, (8) foreign investors, or (9) others. For our purposes, we aggregate the first six types of investors and refer to them as local institutional investors. This study, thus, use three groups of investors, i.e. local institutional investors, local individual investors, foreign investors. We exclude group (9) from our analysis.

3.3. Analyst recommendations

We obtain analyst recommendations data from the I/B/E/S Detail International History-Recommendation file. The time period under discussion spans from July 2, 1997 to August 31, 1998. The choice of time period is driven by the previous literature that identifies this time period as a crisis period (Mitton, 2002). I/B/E/S Detail International History-Recommendation file provides a data entry for each recommendation announcement by each analyst whose brokerage house contributes to the database. Each observation in the file represents the issuance of a recommendation by a particular brokerage house for a specific firm. For instance, one observation would be a recommendation by Brokerage House ABC regarding Firm XYZ. 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 Southeast 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. 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 2 presents summary statistics for our final dataset on analyst recommendations. The table shows that foreign analysts cover a smaller number of firms than local analysts.[50] On average foreign analysts issued recommendations for firms with high market capitalization.

[Insert Table 2 here]

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[50] An unreported result shows that foreign brokerage houses substantially decreased their coverage after the onset of crisis, and local brokerage houses considerably increased their coverage after the onset of crisis. In the period between January 1, 1996 and July 1, 1997 (period prior to crisis), foreign analysts' covered 238 firms in South Korea, while local analysts' coverage for South Korean firms was 499. Substantial decrease in coverage by foreign brokerage houses might be due to increased information asymmetry that resulted after the onset of financial crisis.

Table 3 shows that firms from ten different industries are represented in the sample. Our classification of industries is based on Industry Classification Benchmark (ICB). ICB classification has been created by FTSE. It shows that foreign and local analysts issued most of their recommendations for firms in the industrial sector in South Korea during the crisis period. This reflects the fact that the South Korean economy is a manufacturing based economy. Basic Materials is another sector that attracted significant analyst following.

[Insert Table 3 here]

Table 4 shows the number and percentage of each type of recommendations issued by foreign and local analysts during the crisis period. In this table, we have characterized all strong buy and buy as buy recommendations, and all underperform and sell as sell recommendations. Contrary to popular belief that local analysts issue more buy and less sell recommendations when compared to foreign analysts, our result show that local analysts issue a higher percentage of their recommendations as sell and a smaller percentage of their recommendations as buy when compared to foreign analysts during our sample period, i.e. the crisis period.[51] This is a little surprising because of the dominance of local underwriters in these markets' equity issues (Lai and Teo, 2006; Sullivan and Unite, 2001; Kim et al., 1995). Faced with higher investment banking pressures, it would have been natural if local analysts had issued a larger number of their recommendations as buy recommendations.

[Insert Table 4 here]

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[51] An unreported result shows that foreign analysts issued substantially more percentage of their recommendations as buy recommendations in comparison to local analysts in South Korea during the pre-crisis and the post-crisis periods. To be precise, foreign analysts issued 43% and 50% of their recommendations as buys during the pre-crisis and the post-crisis periods respectively, while corresponding percentage of local analysts' buy recommendations was 28.5% and 29.8%. In case of sell recommendations, there was not enough difference between foreign and local analysts. To be precise, foreign analysts issued 29.3% and 24.1% of their recommendations as sell during the pre-crisis and the post-crisis periods respectively, while corresponding percentage of local analysts' sell recommendations was 25.8% and 28.5%.

4. Empirical tests

4.1. Optimism in local analysts' recommendations

One of the reasons cited for the asymmetric performance of foreign and local analysts' recommendations is that local analysts are overly optimistic in their recommendations. Lai and Teo (2006) argue that because local analysts are more eager to issue buy recommendations, their buy recommendations contain less positive information than foreign analysts' buy recommendations. They conclude that for this very reason, foreign analysts buy recommendations outperform local analyst buy recommendations. Moreover, they suggest that due to local analysts' stronger reluctance to issue sell recommendations as compared to foreign analysts, their sell recommendations contain more negative information than foreign analysts' sell recommendations. They believe that this is the main reason why local analyst sell recommendations outperform foreign analyst sell recommendations.

In this section, we test whether local analysts' optimisms is present in our sample. Similar to Lai and Teo (2006), we do so by estimating the regression on recommendation optimism with local analyst dummy as independent variable.[52] If local analysts are more optimistic than foreign analysts, we should obtain a statistically negative coefficient on local analyst dummy. Our basic regression equation is as follows:

$$OPT_{S,i,t} = \alpha + \beta_1 (Local_S) + \varepsilon_{S,i,t} \tag{1}$$

Where, $OPT_{S,i,t}$ is the measure of optimism[53] in analyst i's recommendation for a particular stock 'S' on the recommendation day 't'; and $Local_S$ is the dummy variable that takes the value of 1 if the recommendation for stock 'S' is issue by local analyst and 0 otherwise.

There may be concerns that differences in the firm specific characteristics of stocks may have some effect on optimism. To address these concerns, we re-estimate Equation (1) by adding control variables that capture liquidity in the stock market, the amount of public information, and the interest or following that a firm might have.

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[52] We estimate TOBIT and OLS regression for Equation (1) and Equation (2). Our results are identical for both types of regressions.
[53] Optimism variable is defined as the difference between analysts' recommendation and last month consensus recommendation (Lai and Teo, 2006).

For example, number of analysts covering a stock, $Analyst\_Foll_S$, is added to capture the amount of public information. More analysts covering a particular stock would imply that such stock will have more information in the market. The market value of a stock, $Log\_MV_{S,t}$, was added to capture investors' interest in a particular stock. We add a dummy variable, $Trans\_Period_t$, to capture the initial panic in the stock markets. The market index on the day of recommendation, Mkt_Ind_t, is added as a control variable to capture the liquidity prevailing in the stock market at the time of issuance of recommendations. Industrial dummies, Ind_Dum_S, controls for industry specific concerns regarding optimism. More specifically, our regression equation takes the following form:

$$OPT_{S,i,t} = \alpha + \beta_1\left(Local_S\right) + \beta_2\left(Analyst\_Foll_{S,t}\right) + \beta_3\left(Log\_MV_{S,t}\right)$$
$$+ \beta_4\left(Trans\_Period_t\right) + \beta_5\left(Mkt\_Ind_t\right) + \beta_i\left(Ind\_Dum_S\right) + \varepsilon_{S,i,t} \qquad (2)$$

In Table 5, we provide a formal test of the hypothesis of whether there is any difference between foreign and local analysts in optimism using Equation (1) and Equation (2).

[Insert Table 5 here]

The OLS coefficient estimates on the local analyst dummy, $Local_S$, give the difference in optimism between the two groups. The coefficient estimates for both equations are insignificant, implying that there is no significant difference between foreign and local analysts in optimism during the crisis period.[54] In the presence of no optimism difference, arguments proposed by Lai and Teo (2006) would predict no significant difference between foreign and local analysts' buy as well as their sell recommendations. However, the results in Farooq (2006) show that foreign analysts' buy recommendations still outperform local analysts' buy recommendations and local analysts' sell recommendations still outperform foreign analysts' sell

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[54] In a separate analysis, we tested for optimism difference Thailand and Indonesia – also the crisis-hit countries. Our results show no significant difference between foreign and local analysts in optimism in these countries during the crisis period. Moreover, we run equation (2) by using optimism variable defined as difference between analysts' recommendation and last month median recommendation. Our results remain unchanged. We also did the above analysis by using those recommendations where last month's mean and median recommendations are generated by at least 5 analysts. The results still remain unchanged.

recommendations in South Korea during the crisis period. Therefore, it seems unlikely that optimism in local analysts' recommendations is causing the asymmetric performance of foreign and local analysts' recommendations at least in our sample period.

4.2. Asymmetric informativeness of foreign and local analysts

Mian and Loh (2006) show that analysts issuing more accurate earnings forecasts also issue more profitable recommendations. Building on this finding, we argue that foreign analysts should have been able to issue better buy recommendations if they were able to pick out firms that suffered relatively less from the crisis, and local analysts should have been able to issue better sell recommendations if they were able to pick out firms that suffered relatively more from crisis. In order to test this conjecture, we test for the difference in proportions of informativeness of foreign and local analysts' buy and sell recommendations. If foreign analysts are better at identifying the firms that suffered less from the crisis, their buy recommendations should be more informative than local analysts' buy recommendations. While, the opposite should hold for their sell recommendations, i.e. their sell recommendations should contain less information than local analysts' sell recommendations. We measure informativeness in analysts' recommendations, $Inf_{Analyst,S,t}$, by their ability to issue buy recommendations when the "future earnings-current price ratio" of the firm they are recommending is greater than the corresponding median "future earnings-current price ratio" for the same industry to which recommended firm belongs, and vice versa for sell recommendations.

$$Inf_{Analyst,S,t} = \left(\frac{E_{S,T}^{Ind}}{P_{S,t}^{Ind}} \right) - Median \left(\frac{E_{i,T}^{Ind}}{P_{i,t}^{Ind}} \right) \qquad (3)$$

Where, $E_{S,T}^{Ind}$ and $E_{i,T}^{Ind}$ are the actual earnings per share of analyst recommended firm 'S' and the firm 'i', belonging to industrial sector 'Ind', for the year 'T', while $P_{S,t}^{Ind}$ and $P_{i,t}^{Ind}$ are the corresponding prices on the day of recommendation 't'.

Table 6 documents the results for the hypothesis of whether there is any difference in the proportions of informativeness of foreign and local analysts' buy and sell recommendations.[55]

[Insert Table 6 here]

Our results show that there is no significant difference in the proportions of informativeness of foreign and local analysts' neither for their buy nor their sell recommendations. The chi-square values for the differences in the proportions of informativeness of buy and sell recommendations are low, 0.03 and 0.09 respectively, indicating no significant difference in the informativeness of foreign and local analysts' recommendations. Since foreign analysts do not seem to be better informed than local analysts concerning buy recommended firms and local analysts do not seem to better informed concerning sell recommended firms the results in Farooq (2006) that foreign analysts' buy recommendations outperform local analysts' buy recommendations, and local analysts' sell recommendations outperform foreign analysts' sell recommendations in South Korea during the crisis period cannot be explained by the different information advantages for the two groups of analysts. Asymmetric ability of foreign and local analysts to pick out firms that suffered relatively less from or more from the crisis does not seem to be causing the asymmetric performance of foreign and local analysts' recommendations.

As a robustness check, we analyzed the performance of foreign and local analysts' stock recommendation in those specific industrial segments which are likely to provide them with information advantage over their counterparts. The Financial and the Industrial Production sectors are two such sectors that provide ideal scenario for testing such information advantage. The financial sector was more prone to local economic conditions and suffered the most from the crisis. It was also the sector that had huge information asymmetries due to the governance problems. Therefore, we would expect local analysts to perform better in this sector. On the other hand, Industrial Production was more export-oriented and may have been less affected by

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[55] In a separate analysis, we tested for informativeness difference by using mean future earnings-current price ratio of the industries. Our results show no significant difference between informativeness of foreign and local analysts sell recommendations. While, in case of buy recommendations, we report significant difference in informativeness in the favor of local analysts. However, results in Farooq (2006) show the outperformance of foreign analysts' buy recommendations during the crisis period.

the crisis. This sector was also the one that led South Korea out of the crisis by an impressive export performance. Therefore, we would expect foreign analysts to perform better in this sector. We use the following regressions to test the performance of foreign and local analysts in these sectors. It is important to mention here that, we do not have a perfect multicollinearity problem because hold recommendations are grouped into the intercept.

$$
\begin{aligned}
CMAR_{S,T,t} = \alpha &+ \beta_{Local}^{Buy}\left(Buy\_Dum_{S,t} * Loc\_Dum_{S,t}\right) \\
&+ \beta_{Foreign}^{Buy}\left(Buy\_Dum_{S,t} * For\_Dum_{S,t}\right) \\
&+ \beta_{Local}^{Sell}\left(Sell\_Dum_{S,t} * Loc\_Dum_{S,t}\right) \\
&+ \beta_{Foreign}^{Sell}\left(Sell\_Dum_{S,t} * For\_Dum_{S,t}\right) + \varepsilon_{S,T}
\end{aligned} \qquad (4)
$$

$$
\begin{aligned}
CMAR_{S,T,t} = \alpha &+ \beta_{Local}^{Buy}\left(Buy\_Dum_{S,t} * Loc\_Dum_{S,t}\right) \\
&+ \beta_{Foreign}^{Buy}\left(Buy\_Dum_{S,t} * For\_Dum_{S,t}\right) \\
&+ \beta_{Local}^{Sell}\left(Sell\_Dum_{S,t} * Loc\_Dum_{S,t}\right) \\
&+ \beta_{Foreign}^{Sell}\left(Sell\_Dum_{S,t} * For\_Dum_{S,t}\right) \\
&+ \beta_{5}\left(Analyst\_Foll_{S,t}\right) + \beta_{6}\left(OPT_{S,i,t}\right) + \beta_{7}\left(Log\_MV_{S,t}\right) \\
&+ \beta_{8}\left(Trans\_Period_{t}\right) + \beta_{9}\left(Mkt\_Ind_{t}\right) + \varepsilon_{S,T,t}
\end{aligned} \qquad (5)
$$

Where $Buy\_Dum_{S,t}$ ($Sell\_Dum_{S,t}$) is the dummy variable that is equal to 1 if the recommendation is a buy (sell) recommendation and 0 otherwise, and $Loc\_Dum_{S,t}$ ($For\_Dum_{S,t}$) is the dummy variable that is equal to 1 if the recommendation is issued by a local (foreign) analyst and 0 otherwise.

Table 7 and Table 8 document the difference between the performance of foreign and local analysts' buy as well as their sell recommendations for the Industrial and the Financial sectors respectively. Panel A1 and Panel B1 of both tables report the OLS coefficient estimates on foreign and local analysts' recommendations using Equation (4) and Equation (5) respectively, while the corresponding Panel A2 and Panel B2 of both tables document the difference between the OLS coefficient estimates on foreign and local analysts' buy and between their sell recommendations.

[Insert Table 7 here]

[Insert Table 8 here]

Our results show that the coefficient estimates on foreign analysts' buy recommendations are always greater than the coefficient estimates on local analysts' buy recommendations for both equations and in both sectors. For example, Table 7, Panel B2, shows that foreign analysts' buy recommendations outperform local analysts' buy recommendations by as much as 10.8 basis points for the lead of 112 days in Industrial sector. While, Table 8, Panel B2, shows that foreign analysts' buy recommendations outperform local analysts' buy recommendations by as much as 13.1 basis points for the lead of 28 days in Financial sector. In case of sell recommendations, our results show that the coefficient estimates on local analysts' sell recommendations are always less than the coefficient estimates on foreign analysts' sell recommendations for both equations and in both sectors. For example, Table 7, Panel B2, shows that local analysts' sell recommendations outperform foreign analysts' sell recommendations by as much as 12.9 basis points for the lead of 28 days in Industrial sector. While, Table 8, Panel B2, shows that local analysts' sell recommendations outperform foreign analysts' sell recommendations by as much as 11.3 basis points for the lead of 28 days in Financial sector. This means that local analysts' sell recommendations are more informative than foreign analysts' sell recommendations in both sectors.

Our results are contrary to our expectations of superior performance of foreign analysts for firms mainly engaged in Industrial production (the sector where foreign analysts may have held an information advantage) and superior performance of local analysts in the Financial sectors (sector where local analysts may have held information advantage). In either of the two sectors, neither foreign nor local analysts hold complete information advantage over the other. This gives further support for the view that information advantage is not what caused the asymmetric performance of foreign and local analysts' recommendations during the financial crisis of 1997-98.

4.3. Investor' trading behavior following analysts' recommendations

In Section 2, we argued that the constraints faced by different groups of investor may lead them to follow certain types of recommendation more than the other. In this section, we will test that argument by analyzing the trade reaction of each investor group in the Korea Stock Exchange to the stock recommendations

issued by foreign and local analysts. The Korea Stock Exchange provides daily net buying and selling data of each investor group for all stocks traded on the Exchange. In order to measure the trade reaction of each investor group, we construct a variable, trade imbalance, which captures buying pressure for a firm (Malmendier and Shanthikumar, 2005). We define 't' day trade imbalance, $TI_{S,x,t}$, for firm 'S' and investor type 'x' as:[56]

$$TI_{S,x,t} = \frac{Buy\_Vol_{S,x,t} - Sell\_Vol_{S,x,t}}{Buy\_Vol_{S,x,t} + Sell\_Vol_{S,x,t}} \tag{6}$$

Where, investor type 'x' can be foreign investors, local institutional investors, or local individual investors, and $Buy\_Vol_{S,x,t}$ ($Sell\_Vol_{S,x,t}$) is the number of shares of stock 'S' bought (sold) by investor type 'x' during 't' days of trading.

We regress trade imbalance, $TI_{S,x,t}$, with interaction of analyst type dummy and recommendation type dummy to gauge the trade reactions of each investor group to foreign and local analysts' recommendations. More specifically, our regression estimates the following equation for each investor type.

$$TI_{S,x,t} = \alpha + \beta_1 \left(Buy\_Dum_{S,t} * Loc\_Dum_{S,t}\right) + \beta_2 \left(Buy\_Dum_{S,t} * For\_Dum_{S,t}\right)$$
$$+ \beta_3 \left(Sell\_Dum_{S,t} * Loc\_Dum_{S,t}\right) + \beta_4 \left(Sell\_Dum_{S,t} * For\_Dum_{S,t}\right) + \varepsilon_{S,x,t} \tag{7}$$

Table 9 present trade reactions of investors in response to foreign and local analysts' buy and sell recommendations. Panel A through Panel E document trade reactions of investors for day of recommendation, first two days, first five days, day six through day fourteen, and day fifteen through day twenty eight respectively.

[Insert Table 9 here]

Our results in Table 9, Panel A through Panel E, show that coefficient estimates for foreign analysts' buy recommendations are always significant and positive for foreign investor's trading. Similar is the case of local analysts' buy recommendations, since their coefficient estimates are also significant and positive for

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[56] We also create several other variables to capture investors' trading behavior and rerun Equation (2) with the alternate variables. The alternate variables used are $T1 = TI_{S,x,t} - Mean\left(TI_{S,x,t}\right)$,

$T2 = Buy\_Vol_{S,x,t} - Sell\_Vol_{S,x,t}$, and $T3 = \dfrac{Buy\_Vol_{S,x,t} - Sell\_Vol_{S,x,t}}{Mean(Total\_Volume_{S,Yeat(t)})}$.

local institutional investor's trading. These results imply that foreign and local analysts' buy recommendations generate significant buying from foreign investors and local institutional investors respectively for all lead days. This is not surprising given that foreign analyst recommendations are more accessible to foreign investors while local analyst recommendations are more accessible to local institutions. However, our results in Table 9, Panel C through Panel E, also show that coefficient estimates for local analysts' buy recommendations are significant and negative for local individual investor's trading. It implies that local individual investors, the biggest group of investors in the Korea Stock Exchange, engage in significant selling in response to local analysts' buy recommendations. Interestingly, this finding may help to explain the superior performance of institutions and underperformance of individual investors in emerging markets (Barber et al., 2006). No significant selling is observed in response to foreign analysts' buy recommendations. We argue that significant buying from foreign investors following foreign analysts' buy recommendations generate demand for those stocks and eventually increase their prices more than the stock recommended as buy by local analysts, recommendations that end up generating significant subsequent selling from local individual investors. The main reason for the superior performance of foreign analysts' buy recommendations relative to local analysts' buy recommendations in our sample thus seems related the impact that these recommendations have on investors that pay attention to the issuing analyst.

Our results in Table 9, Panel B through Panel E, show that coefficient estimates for local analysts' sell recommendations are significant and negative for local institutional investor's trading. This implies that local analysts' sell recommendations generate significant selling from local institutional investors during the post-recommendation period in our sample. The selling pattern of local individual investors appears to be persistent and increasing over time indicating that local institutional investors gradually increase their selling on local analysts' sell recommendations. In contrast to local analysts' sell recommendations, foreign analysts' sell recommendations generate no significant selling from any group except by local institutional investors on the first two days of trading. We argue that significant selling from local institutional investors following local analysts' sell recommendations increase the supply of those stocks and eventually reduce their prices more than the stock recommended by foreign analysts, which generate no

significant subsequent selling. The main reason for the superior performance of local analysts' sell recommendations relative to foreign analysts' sell recommendations in our sample again seems to be the impact that these recommendations have on investors, in this case local ones that do pay attention to the issuing analyst.

5. Conclusion

This study shows that analysts' ability to influence investors, especially during the periods of extreme uncertainties, may explain their relative performance better than the arguments that revolve around the information advantage hypothesis. Our results show that it is the ability of foreign analysts' buy recommendations and local analysts' sell recommendations to influence investors and generate considerable subsequent trade that is responsible for superior performance foreign analysts' buy recommendations and local analysts' sell recommendations in emerging stock markets. Using data from the Korean Stock Exchange, we show that foreign analysts' buy recommendations and local analysts' sell recommendations are more influential than their counterpart recommendations (i.e. local analysts' buy recommendations and foreign analysts' sell recommendations respectively) during the Asian financial crisis. Our results show that foreign analysts' buy and local analysts' sell recommendations do generate significantly more buying and selling respectively than their counterpart recommendations.

We argue that significant trading generated by foreign analysts' buy and local analysts' sell recommendations leads to better performance for these recommendations than for normal recommendations. This explains the results documented in Farooq (2006), where he shows that foreign analysts' buy recommendations outperform local analysts' buy recommendations, whereas local analysts sell recommendations outperform foreign analysts' sell recommendations. These results are consistent with the previous literature that shows that buying and selling pressures, i.e. demand and supply shocks, have a strong impact on stock prices and returns.

We also show that earlier explanations proposed to explain the asymmetric performance of foreign and local analysts' recommendations do not hold in our sample period. Since our sample exhibits no significant difference between foreign and local analysts in terms of optimism nor in terms of ability to pick out firms that

are relatively less affected or firms that are relatively more affected by the crisis these explanations are ruled out when looking for an explanation for the performance difference.

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Table 1
Distribution of brokerage houses
The table shows the number of foreign and local brokerage houses that issued at least one recommendation in South Korea during July 2, 1997 and August 31, 1998. Foreign brokerage houses are those with head-offices outside South Korea and having no physical presence in South Korea. Local brokerage houses are those that have their head-office in South Korea.

Brokerage Houses	Number
Foreign Brokerage Houses	13
Pure Local Brokerage Houses	4
Foreign Brokerage Houses / Local Brokerage Houses	3.25

Table 2
Basic descriptive statistics
This table presents the basic descriptive statistics for our sample. The sample includes all firms in South Korea that have at least one recommendation issued by local or foreign analysts during our sample period. The rows present number of firms covered, number of recommendations issued, average number of recommendations per firm, and average market capitalization on the day of recommendation. The sample period is from July 2, 1997 to August 31, 1998.

Basic Statistics	Foreign Analysts	Local Analysts
Number of Firms Covered	159	567
Number of Recommendations	529	1486
Recommendations Per Firm	3.32	2.62
Average Market Capitalization on the Recommendation Date (million Korean Won)	1114420	261600

Table 3
Industries followed by foreign and local analysts
This table presents the descriptive statistics for the type of firms covered in our sample by local and foreign analysts in South Korea. The sample includes all firms that have at least one recommendation issued by local or foreign analysts. The sample period is from July 2, 1997 to August 31, 1998.

ICB Industrial Segments	Foreign Analysts	Local Analysts
Oil and Gas	3.4%	1.0%
Basic Materials	10.8%	16.2%
Industrial	18.5%	25.0%
Consumer Goods	9.8%	19.5%
Healthcare	0.4%	4.9%
Consumer Services	4.0%	1.8%
Telecommunications	1.1%	0.8%
Utilities	7.8%	2.4%
Financials	7.9%	5.5%
Technology	8.7%	5.7%

Table 4
Type of recommendations issued by foreign and local analysts
This table presents basic descriptive statistics for the type of recommendations issued in South Korea. The sample period is from July 2, 1997 to August 31, 1998. Panel A documents number of each type of recommendations issued, while Panel B reports percentage of particular type of recommendations issued by each group. 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

Recommendations	Foreign Analysts	Local Analysts
Buy	170	290
Hold	167	562
Sell	192	634

Panel B: Percentage of each type of recommendations

Recommendations	Foreign Analysts	Local Analysts
Buy	32.10%	19.50%
Hold	31.60%	37.80%
Sell	36.30%	42.70%

Table 5
Optimism in analysts' recommendations
This table reports the OLS regression coefficients for Equation (1) and Equation (2) with Optimism in analysts' recommendations as the dependent variable. Optimism variable is defined as analyst recommendation minus last month's mean recommendation. The sample period is from July 2, 1997 to August 31, 1998. 1% significance is denoted by ***, 5% by ** and 10% by *.

	Equation (1)		Equation (2)	
Independent Variables	**Coefficient**	**t-value**	**Coefficient**	**t-value**
Local Analyst Dummy	-0.036	-0.44	-0.073	-0.67
Analyst Following			0.039**	2.26
Market Value on Recommendation Day			-0.457***	-4.49
Transition Period			0.045	0.48
Market Index on Recommendation Day			0.005**	2.29
Adjusted R^2		0.000		0.020

Table 6
Difference in proportion of informativeness of foreign and local analysts' recommendations
This table reports the difference in proportion of informativeness of foreign and local analysts' recommendations. Informativeness in analysts' recommendations is measured using Equation (3). The sample period is from July 2, 1997 to August 31, 1998.

Type of Recommendations		**Foreign Analyst**	**Local Analyst**
Buy Recommendations	Informative	74	125
	Non-Informative	42	74
	Chi-square	0.03	
	p-value	0.862	
Sell Recommendations	Informative	64	46
	Non-Informative	201	135
	Chi-square	0.09	
	p-value	0.761	

Table 7
Performance of market-adjusted returns following analysts' recommendations in Industrial sector

This table presents the performance of foreign and local analysts buy and sell recommendations during our sample period. The sample period is from July 2, 1997 to August 31, 1998. Panel A1 and Panel B1 document regression coefficients for Equation (4) and Equation (5) respectively. 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". 1% significance is denoted by ***, 5% by ** and 10% by *. Panel A2 and Panel B2 reports the relative performance of foreign and local analysts' buy and sell recommendations. We test the following null hypotheses using the Wald's test:

$$H_0: \beta_{Foreign}^{Buy} = \beta_{Local}^{Buy} \qquad\qquad H_0: \beta_{Foreign}^{Sell} = \beta_{Local}^{Sell}$$

Values that are significant at 10% level are shown as bold.

Panel A1: Regression coefficients of Equation (4)

Lead Days	Local Buy	Local Sell	Foreign Buy	Foreign Sell	Adjusted R^2
First 14 Days	-0.007	-0.061	0.036*	0.025	0.049
First 28 Days	-0.003	-0.087***	0.020	0.025	0.043
First 42 Days	0.001	-0.063**	0.083	0.005	0.022
First 56 Days	-0.010	-0.086***	0.131***	0.001	0.036

Panel A2: Difference between regression coefficients of Equation (4)

Lead Days	Foreign Buy – Local Buy		Foreign Sell – Local Sell	
	Value	F-value	Value	F-value
First 14 Days	0.043	**3.99**	0.086	**7.75**
First 28 Days	0.023	0.44	0.112	**16.33**
First 42 Days	0.082	**3.91**	0.068	1.26
First 56 Days	0.141	**8.31**	0.087	1.84

Panel B1: Regression coefficients of Equation (5)

Lead Days	Local Buy	Local Sell	Foreign Buy	Foreign Sell	Adjusted R^2
First 14 Days	0.014	-0.086***	0.059**	0.004	0.078
First 28 Days	0.019	-0.114***	0.053	0.015	0.062
First 42 Days	0.024	-0.083***	0.087**	-0.013	0.168
First 56 Days	0.014	-0.109***	0.122**	-0.019	0.217

Panel B2: Difference between regression coefficients of Equation (5)

Lead Days	Foreign Buy – Local Buy		Foreign Sell – Local Sell	
	Value	F-value	Value	F-value
First 14 Days	0.045	**3.86**	0.090	**7.24**
First 28 Days	0.034	0.85	0.129	**15.93**
First 42 Days	0.063	**2.43**	0.070	1.20
First 56 Days	0.108	**4.02**	0.090	1.72

Table 8
Performance of market-adjusted returns following analysts' recommendations in Financial sector

This table presents the performance of foreign and local analysts buy and sell recommendations during our sample period. The sample period is from July 2, 1997 to August 31, 1998. Panel A1 and Panel B1 document regression coefficients for Equation (4) and Equation (5) respectively. 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". 1% significance is denoted by ***, 5% by ** and 10% by *. Panel A2 and Panel B2 reports the relative performance of foreign and local analysts' buy and sell recommendations. We test the following null hypotheses using the Wald's test:

$$H_0: \beta_{Foreign}^{Buy} = \beta_{Local}^{Buy} \qquad\qquad H_0: \beta_{Foreign}^{Sell} = \beta_{Local}^{Sell}$$

Values that are significant at 10% level are shown as bold.

Panel A1: Regression coefficients of Equation (4)

Lead Days	Local Buy	Local Sell	Foreign Buy	Foreign Sell	Adjusted R^2
First 14 Days	-0.014	-0.050**	0.078	0.026	0.065
First 28 Days	-0.077	-0.104***	0.068	0.018	0.106
First 42 Days	0.003	0.031	0.177***	0.089	0.048
First 56 Days	-0.010	0.036	0.180***	0.071	0.029

Panel A2: Difference between regression coefficients of Equation (4)

Lead Days	Foreign Buy – Local Buy		Foreign Sell – Local Sell	
	Value	F-value	Value	F-value
First 14 Days	0.092	**2.91**	0.076	**6.66**
First 28 Days	0.145	**6.48**	0.122	**6.85**
First 42 Days	0.174	**8.44**	0.058	0.86
First 56 Days	0.19	**7.14**	0.035	**0.27**

Panel B1: Regression coefficients of Equation (5)

Lead Days	Local Buy	Local Sell	Foreign Buy	Foreign Sell	Adjusted R^2
First 14 Days	-0.001	-0.049	0.086**	0.014	0.065
First 28 Days	-0.077	-0.090*	0.054	0.023	0.096
First 42 Days	0.024	0.014	0.118	0.030	0.251
First 56 Days	0.049	-0.009	0.151*	-0.010	0.257

Panel B2: Difference between regression coefficients of Equation (5)

Lead Days	Foreign Buy – Local Buy		Foreign Sell – Local Sell	
	Value	F-value	Value	F-value
First 14 Days	0.087	2.37	0.063	**2.90**
First 28 Days	0.131	**5.13**	0.113	**4.72**
First 42 Days	0.094	1.89	0.016	0.10
First 56 Days	0.102	1.73	-0.001	0.00

Table 9
Trade Reaction to Analysts' Recommendations by Investor Type
This table reports the trade reaction for stocks traded at the Korean stock exchange grouped by investor type (i.e. foreign investors, local institutions, and local individual investors), analyst type (i.e. foreign analysts and local analysts), and recommendation type (buy and sell recommendations). Panel A through Panel D report the coefficient estimates on foreign buy, local buy, foreign sell, and local sell dummies when trade imbalance is regressed on these dummies. The regressions are estimated separately for each investor type. *** = significant at the 1% level; ** = significant at the 5% level; * = significant at the 10% level.

Panel A: Day of recommendation

Investor Type	Foreign Buy	Local Buy	Foreign Sell	Local Sell
Foreign Investors	0.102**	-0.009	0.001	-0.002
Local Individual Investors	-0.037	-0.015	0.025	0.013
Local Institutional Investors	-0.006	0.165***	-0.127***	-0.004

Panel B: First 2 days of trading

Investor Type	Foreign Buy	Local Buy	Foreign Sell	Local Sell
Foreign Investors	0.118**	0.020	0.019	-0.001
Local Individual Investors	-0.012	-0.024	0.032**	0.010
Local Institutional Investors	-0.049	0.158***	-0.145***	-0.62**

Panel C: First 5 days of trading

Investor Type	Foreign Buy	Local Buy	Foreign Sell	Local Sell
Foreign Investors	0.124**	0.112***	-0.002	0.045
Local Individual Investors	-0.014	-0.032**	0.014	0.008
Local Institutional Investors	-0.045	0.107***	-0.063	-0.098***

Panel D: 6 to 14 days of trading

Investor Type	Foreign Buy	Local Buy	Foreign Sell	Local Sell
Foreign Investors	0.123***	0.118***	-0.063	0.055
Local Individual Investors	-0.016	-0.070***	0.004	-0.015**
Local Institutional Investors	0.006	0.217***	-0.015	-0.087***

Panel E: 15 to 28 days of trading

Investor Type	Foreign Buy	Local Buy	Foreign Sell	Local Sell
Foreign Investors	0.174***	0.044	0.067	0.029
Local Individual Investors	-0.020	-0.041***	-0.007	-0.009
Local Institutional Investors	0.105***	0.159***	0.015	-0.113***

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