INVESTORS' TRADING AND RELATIVE PERFORMANCE OF ANALYSTS DURING THE CRISIS PERIOD

Omar Farooq*

Abstract

This paper documents the relationship between foreign and local analysts' recommendations and subsequent trades done by different investor groups – foreign investors, local institutional investors, and local individual investors. Using analysts' recommendations and investors' trading data from South Korea, we show that foreign analysts' buy recommendations and local analysts' sell recommendations generate significantly more subsequent trade than their respective counterpart recommendations (i.e. local analysts' buy and foreign analysts' sell recommendations) during the Asian financial crisis of 1997-98. We argue that the ability of foreign analysts' buy recommendations and local analysts' sell recommendations to generate trade is responsible for superior performance foreign analysts' buy recommendations and local analysts' sell recommendations in emerging stock markets. 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.

Keywords: Analyst Recommendations; Asian Financial Crisis; Foreign and Local Analysts; Investor Trading; Optimism; Relative Performance

JEL classification*:* G15, G24

* *Department of Management, American University in Cairo, Cairo, Egypt*
Tel: +20 102 376 0037
Email: omar.farooq.awan@gmail.com

1. Introduction

Recent strand of literature documents asymmetry in the performance of foreign and local analysts' stock recommendations in emerging markets. Lai and Teo (2008) and Farooq (2013) document that foreign analysts' buy recommendations outperform local analysts' buy recommendations, while local analysts' sell recommendations perform better than foreign analysts' sell recommendations. These results are in contrast with the findings of earlier studies that report complete information advantage of one group over another. For instance, Malloy (2005) 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". Geographic proximity of local analysts with the firms, therefore, translates into better performance of these analysts relative to geographically distant foreign analysts (Chang, 2010; Bae et al., 2008). Higgins (2002) and Bacmann and Bolliger (2001), however, report the opposite results by arguing that due to access to better resources, broader expertise, and greater talent, foreign analysts outperform local analysts. Better resources and greater talent, therefore, convert available information into more valuable forecasts and recommendations.

This paper argues 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 the findings of Lai and Teo (2008) and Farooq (2013). For information centric arguments to hold, one group should completely outperform the other in buy as well as in sell recommendations. In this paper, we depart from the information centric arguments by proposing that certain type of recommendations influence investors' trading behavior more than the others during the periods of extreme uncertainties. We argue that that the way investors react to analysts' recommendations can explain the findings of Lai and Teo (2008) and Farooq (2013) better than the information centric arguments. Using analysts' recommendations and investors' trading data from South Korea, we show that foreign analysts' buy recommendations and local analysts' sell recommendations generate significantly more subsequent trade than their respective counterpart recommendations (i.e. local analysts' buy and foreign analysts' sell recommendations) during the Asian

financial crisis of 1997-98. Our results show that foreign analysts' buy recommendations generate significant buying from foreign investors – most of which are institutional investors. The buying trend of foreign investors is persistent and increasing over time. We argue that foreign investors, 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. On the contrary, local analysts' buy recommendations, apart from generating significant buying from local 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, we argue that significant buying by foreign investors – in response to foreign analysts' buy recommendations – should have a positive impact on stock prices (Clark and Berko, 1997; Froot, et al., 2001). Therefore, we observe significant positive returns following foreign analysts' buy recommendations. In contrast to foreign analysts' buy recommendations, local analysts' buy recommendations are not followed by significant positive returns due to the fact that their recommendations not only generate significant buying from local institutional investors but also generate significant selling from local individual investors. We argue that this significant buying and selling should result in no price appreciation, thereby resulting in lower performance of buy recommendations issued by local analysts. Consequently, foreign analysts' buy recommendations outperform local analysts' buy recommendations during the Asian financial crisis. Our results show that returns following foreign analysts' buy recommendations are significantly higher than returns following local analysts' buy recommendations during the Asian financial crisis.

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 during the first two days of trading during the post-recommendation period. However, local individual investors buy in response to these recommendations, thereby minimizing any impact that local institutional investors may have on subsequent returns. In contrast to foreign analysts' sell recommendations, local analysts' sell recommendations generate significant post-recommendation selling over a period of approximately four 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 should have a negative impact on prices during the crisis period, thereby decreasing their prices more than the prices of stock that are recommended as sell by foreign analysts. As a result of this, local analysts' sell recommendations outperform foreign analysts' sell recommendations. We show that returns following local analysts' sell recommendations are significantly lower than returns following foreign analysts' sell recommendations during the Asian financial crisis.

Our explanation differs from the arguments cited by Lai and Teo (2008). They argue that the asymmetry in the performance of foreign and local analysts' 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 information 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. In contrast to Lai and Teo (2008), we show that optimism cannot be the reason for asymmetry in the performance of foreign and local analysts' recommendations during the crisis period. Our results show no significant difference in the optimism between foreign and local analysts during our sample period.

The remainder of the paper will proceed as follows: Section 2 presents the motivation and background for this paper. Section 3 documents the data and presents summary statistics. Section 4 reports the assessment of our hypothesis. Section 5 tests whether the alternate arguments that explain the asymmetry in relative performance of foreign and local analysts holds or not. The paper ends with Section 6 where we present conclusions.

2. Motivation and background

2.1 Impact of foreign and local analysts' recommendations on the trading behavior of different investor groups

Traditional literature on the "prudent-man rule" and institutional investment suggests that institutional investors base their investment decisions on the fiduciary responsibilities that accompany while handling clients' funds.[1] 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

[1] The prudent-man rule suggests that, in the absence of law regarding the types of investments undertaken by the fiduciary, the fiduciary must perform his duties with care, skill, prudence, and diligence.

practically sound, but also regarded by others as decisions which are reasonable, well-informed, and prudent (Badrinath et al., 1989). Furthermore, the law also lays down several constraints, including severe penalties in case of irresponsible investment behavior by the 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 important during the times of extreme economic uncertainty, i.e. the crisis period. However, during such times, a safety-net may be provided to the managers if they can demonstrate that their assessment regarding the soundness of a particular investment choice was shared by the others. Badrinath et al. (1989) document that level of institutional holdings is 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 the countries they are investing in experience crisis. As a result, they may base their investment decisions on the recommendations issued by financial analysts, who are considered to be more informed. By doing so, foreign investors can effectively justify their decisions ex-post, in case any of their decisions lead to much worse performance than the relevant benchmark. Furthermore, we expect them to base their buy or hold decisions more than their sell decisions on analysts' recommendations. Sell decisions are, usually, 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 (Singh, 1998).[2] These losses induced foreign investors to sell their holdings for rebalancing their assets irrespective of analysts' recommendations. Therefore, it is reasonable 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. the time when the firms need them the most) in comparison to foreign investors (Rajan and Zingales, 1998).[3] 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 in case of any imprudent investment decision. 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 a 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.

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. (2008), while studying South Korea, document that foreign investors had positive net inflows, while local investors had negative net inflows during the crisis period. Kamesaka and Wang (2001) and Vimilsiri (2001) also document similar findings for Indonesia and Thailand respectively. These observations indicate that foreign analysts' buy recommendations and local analysts' sell recommendations were more influential in generating subsequent trade during the period of crisis.

2.2 Investors' trading behavior and the relative performance of foreign and local analysts' recommendations

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 put forward to explain the relationship between foreign investors' inflows and subsequent stock returns is that foreign investors, most of which are big financial institutions, have huge sums of money to invest in stocks. By investing huge sums of money, they are able to affect the stock prices significantly. In a related study, Gompers and Metrick (2001) investigate equity holdings of large institutions

[2] The net foreign equity portfolio investment in South Korea during the period between July 1997 to December 1997 was negative (Source: The Bank of Korea).

[3] Rajan and Zingales (1998) argue that local institutional investors used to get above market rate of returns from the firms during the periods when the firms were performing well, and in turn they would help the firms by providing capital with below market rate during the periods when the firms were performing bad.

from 1980 to 1996 and document that demand shocks generated by the large institutional investors can explain nearly 50 percent of increase in the stock prices of large firms relative to the stock prices of small firms. 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 (2005) analyze Thai stock market during the Asian financial crisis and document that foreign investors' buying resulted in significant positive returns as compared to local buying. In another related study, Clark and Berko (1996) examine Mexican stock market and document that unexpected inflows of 1 percent of the market's capitalization drive prices up by 13 percent during the 1993 Mexican crisis.

Similar arguments can be floated to argue that any significant outflows should have negative impact on stock prices and returns. Chan and Lakonishok (1995), for instance, analyze the trades of 37 large investment management firms in the USA and document average price change of negative 0.35 percent due to excessive sell trade. Consistent with arguments highlighted above, we claim that the supply shocks generated due to the 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 the 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 a permanent price increase. Since Standard & Poors adds a stock to the S&P 500 index solely based on the 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. In a related study, Goetzmann and Massa (2003) examine 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 the impact of investors' trading on stock prices, we argue that the relative performance of foreign and local analysts' recommendations can be partly explained by the impact that their recommendations have on the trading behavior 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 (i.e. local analysts' buy and foreign analysts' sell recommendations).

3. Data

We conduct our analyses using the data from South Korea. South Korea was chosen due to the availability of trading data regarding different investor groups. The sample period for this study is from July 2, 1997 to August 31, 1998 (Mitton, 2002).[4] We will, briefly, discuss the data in the following sub-sections.

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

[4] 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.

analysts.[5] For the purpose of this paper, we leave out those foreign analysts from our analyses that have local presence in South Korea. We obtain information about the location of head-offices of brokerage houses from brokerage houses' websites and www.Business.com.

It was hard to find out if a particular brokerage house had a local presence or not during the Asian financial crisis. Websites of security exchange commissions, brokerage houses, or stock exchanges do not provide much information on that. We, however, used the information provided in the IBES Detail International History-Recommendation file to separate out those brokerage houses that had local presence during the crisis period from those that did not have the local presence. The IBES file assigns a unique code to each of the contributing brokerage house. Brokerage houses having several subsidiaries have separate code for each subsidiary. For instance, 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 the period understudy. The 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 in our sample. It is noteworthy to mention that South Korea attracted substantial interest from foreign brokerage houses during the Asian financial crisis. The number of foreign brokerage houses, in fact, exceeded the number of local brokerage houses during our analysis period. Table 1 also shows that foreign analysts cover a smaller number of firms than local analysts.[6] An important observation in the table is that foreign analysts issue more recommendations per firm than local analysts. More frequent revisions indicate that foreign analysts scrutinize firms more closely than local analysts. Table 1 also shows that, on average, foreign analysts issued recommendations for firms with high market capitalization relative to local analysts.

3.2 Trading data

The data provided by the Korea Stock Exchange allows us to distinguish between trades made by different investor groups. The data 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, and (9) Others. For the purpose of this paper, 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, and foreign investors. We exclude group (9) from our analysis.

3.3 Analyst recommendations

We obtain analyst recommendations data from the IBES Detail International History-Recommendation file.[7] The IBES 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 between "analyst" recommendations and "brokerage house" recommendations in our sample. Table 2 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.

[5] 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 less important in Asian emerging markets than Western developed markets.

[6] 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.

[7] The IBES converts the original text recommendations provided by analysts to its own 5-point rating system. Recommendations in the IBES 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 (2008), 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 (2008), we aggregate IBES ratings 1 and 2 as buy, and 4 and 5 as sell throughout the study.

Table 1. Descriptive statistics regarding brokerage houses

The table shows the basic descriptive for those brokerage houses that issued at least one recommendation in South Korea during the period between July 2, 1997 and August 31, 1998.

	Foreign Analysts	**Local Analysts**
Number of Brokerage Houses	13	4
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 2. Industries followed by foreign and local analysts

This table presents the descriptive statistics for the type of industries covered by foreign and local 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.

Industries	**Foreign Analysts**	**Local Analysts**
Oil and Gas	3.40%	1.00%
Basic Materials	10.80%	16.20%
Industrial	18.50%	25.00%
Consumer Goods	9.80%	19.50%
Healthcare	0.40%	4.90%
Consumer Services	4.00%	1.80%
Telecommunications	1.10%	0.80%
Utilities	7.80%	2.40%
Financials	7.90%	5.50%
Technology	8.70%	5.70%

Table 3 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 our expectations, 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.[8] This is a little surprising because of the dominance of local underwriters in these markets (Lai and Teo, 2008; 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.

[8] 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%.

Table 3. Type of recommendations issued by foreign and local analysts

This table presents descriptive statistics for the type of recommendations issued by foreign and local analysts in South Korea. The sample period is from July 2, 1997 to August 31, 1998.

Recommendations	Foreign Analysts	Local Analysts
Buy	170 (32.10%)	290 (19.50%)
Hold	167 (31.60%)	562 (37.80%)
Sell	192 (36.30%)	634 (42.70%)

4. Empirical tests

4.1 Influence of foreign and local analysts' recommendations on the trading behavior of different types of investors

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 different 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 that captures the buying pressure for a firm (Malmendier and Shanthikumar, 2007). We call this variable as trade imbalance (TI). The T-day trade imbalance of investor 'x' after the issuance of analyst recommendation on date 't' for a firm 'S' ($TI_{S,x,T,t}$) is defines as follows.[9] In the following equation, investor 'x' can be foreign investors, local institutional investors, or local individual investors. While, $BVol_{S,x,T,t}$ is the number of shares of stock 'S' bought by investor 'x' during T-days of trading after the issuance of analyst recommendation on date 't' and $SVol_{S,x,T,t}$ is the number of shares of stock 'S' sold by investor 'x' during T-days of trading after the issuance of analyst recommendation on date 't'.

$$TI_{S,x,T,t} = \frac{BVol_{S,x,T,t} - SVol_{S,x,T,t}}{BVol_{S,x,T,t} + SVol_{S,x,T,t}} \quad (1)$$

In order to gauge how different groups of investors react to the recommendation issued by foreign or local analysts, we estimate a regression equation with trade imbalance ($TI_{S,x,T,t}$) as a dependent variable and four dummy variables representing foreign analysts' buy recommendations issued on date 't' for stock 'S' ($FBUY_{S,t}$), local analysts' buy recommendations issued on date 't' for stock 'S' ($LBUY_{S,t}$), foreign analysts' sell recommendations issued on date 't' for stock 'S' ($FSELL_{S,t}$), and local analysts' sell recommendations issued on date 't' for stock 'S' ($LSELL_{S,t}$) as independent variables. The following regression equation is run separately for local institutional investors, local individual investors, and foreign investors.

$$TI_{S,x,T,t} = \alpha + \beta_1(LBUY_{S,t}) + \beta_2(FBUY_{S,t}) + \beta_3(LSELL_{S,t}) + \beta_4(FSELL_{S,t}) + \varepsilon_{S,x,T,t} \quad (2)$$

The results of our analysis are reported in Table 4. Our results in Table 4, Panel A, show that the coefficient estimates for FBUY are always significant and positive for all trading periods when foreign investors trade. It shows that foreign investors consider foreign analysts' buy recommendations as an important determinant of their buying decision. We argue that higher amount of buying generated by foreign investors as a result of foreign analysts' buy recommendations has a positive impact on stock prices, It, therefore, causes prices to go up and results in higher value of foreign analysts' buy recommendations. Table 4, Panel A, also shows that local institutional investors and local individual investors disregard foreign analysts' buy recommendations. It may be because of the fact that these two investors group do not have timely access to foreign analysts' recommendations.

Our results in Table 4, Panel B, show that the coefficient estimates for LBUY are always significant and positive for all trading periods when local institutional investors trade. This is not surprising given that local analysts' recommendations are more accessible to local institutional investors. A surprising result reported in Table 4, Panel B, is that local analysts' buy recommendations also generate significant selling from local institutional investors during the same period. We argue that excessive selling by local individual investors – one of the most important investor groups in the market – neutralizes any price impact that local institutional investors may have due to their buying. It, therefore, results in lower value of local analysts' buy recommendations.

Our results in Table 4, Panel C, show that the coefficient estimates for LSELL are always insignificant for all trading periods when foreign investors trade. It indicates low value of sell recommendations issued by foreign analysts in the eyes of foreign investors. We argue that selling decisions made by foreign institutional investors are

[9] We also create several other variables to capture investors' trading behavior and rerun Equation (2) with the alternate variables. The alternate variables are: TA = $TI_{S,x,T,t}$ – Mean($TI_{S,x,T,t}$), TB = ($BVol_{S,x,T,t}$ – $SVol_{S,x,T,t}$), and TC = ($BVol_{S,x,T,t}$ – $SVol_{S,x,T,t}$)/Mean(Total Annual Volume$_S$). The results were qualitatively the same.

usually governed by the Principals' requirements, which can simply force them to exit foreign stocks irrespective of analysts' recommendations during a period of crisis. It, therefore, causes prices not to react and results in lower value of foreign analysts' sell recommendations.

Table 4, Panel D, reports that local analysts' sell recommendations generate significant selling from local institutional investors. We show that the coefficient estimates for LSELL are always significant and negative for all trading periods when local institutional investors trade. , It, therefore, causes prices to go down and results in higher value of local analysts' sell recommendations.

Table 4. Trade reaction of different type of investors in response to foreign and local analysts' recommendations

This table reports the trade reaction of different types of investors in response to foreign and local analysts' recommendations for stocks traded at the Korea Stock Exchange. The analysis is done using Equation (2). 1% significance is denoted by ***, 5% by ** and 10% by *.

Panel A. Buy recommendations issued by foreign analysts (FBUY)

	1-Day Period	2-Day Period	5-Day Period	14-Day Period	28-Day Period
Foreign Investors	0.102**	0.118**	0.124**	0.123***	0.174***
Local Institutional Investors	-0.006	-0.049	-0.045	0.006	0.105***
Local Individual Investors	-0.037	-0.012	-0.014	-0.016	-0.020

Panel B. Buy recommendations issued by local analysts (LBUY)

	1-Day Period	2-Day Period	5-Day Period	14-Day Period	28-Day Period
Foreign Investors	-0.009	0.020	0.112***	0.118***	0.044
Local Institutional Investors	0.165***	0.158***	0.107***	0.217***	0.159***
Local Individual Investors	-0.015	-0.024	-0.032**	-0.070***	-0.041***

Panel C. Sell recommendations issued by foreign analysts (FSELL)

	1-Day Period	2-Day Period	5-Day Period	14-Day Period	28-Day Period
Foreign Investors	0.001	0.019	-0.002	-0.063	0.067
Local Institutional Investors	-0.127***	-0.145***	-0.063	-0.015	0.015
Local Individual Investors	0.025	0.032**	0.014	0.004	-0.007

Panel D. Sell recommendations issued by local analysts (LSELL)

	1-Day Period	2-Day Period	5-Day Period	14-Day Period	28-Day Period
Foreign Investors	-0.002	-0.001	0.045	0.055	0.029
Local Institutional Investors	-0.004	-0.620**	-0.098***	-0.087***	-0.113***
Local Individual Investors	0.013	0.010	0.008	-0.015**	-0.009

4.2 Implications of investors' trading behavior on the relative performance of foreign and local analysts' recommendations

As indicated earlier, one of the implications of the above findings is that foreign analysts' buy recommendations should be more valuable than local analysts' buy recommendations, while local analysts' sell recommendations should outperform foreign analysts' sell recommendations. In order to test whether these implications hold, we estimate the following regression equation with T-day cumulative market-adjusted returns for stock 'S' following the issuance of recommendations on date 't' ($CMAR_{S,T,t}$) and four dummy variables – $FBUY_{S,t}$, $LBUY_{S,t}$, $FSELL_{S,t}$, and $LSELL_{S,t}$ – as independent variables. In addition, we also control for a number of factors that can affect cumulative market-adjusted returns. These control factors are: total debt to total asset ratio ($LEVERAGE_{S,t}$), market capitalization of a firm ($SIZE_{S,t}$), analyst following ($ANALYST_{S,t}$), and a dummy variable representing the initial panic in the stock markets ($TRANSITION_{S,t}$). We also include industry dummies (IDUM) in our regression equation. Our regression takes the following form:

$$\begin{aligned} CMAR_{S,T,t} &= \alpha + \beta_1(LBUY_{S,t}) + \beta_2(FBUY_{S,t}) + \beta_3(LSELL_{S,t}) + \\ &+ \beta_4(FSELL_{S,t}) + \beta_5(LEVERAGE_{S,t}) + \beta_5(SIZE_{S,t}) + \\ &+ \beta_5(ANALYST_{S,t}) + \beta_5(TRANSITION_{S,t}) + \\ &+ \sum_{Ind} \beta^{Ind}(IDUM) + \varepsilon_{S,T,t} \end{aligned} \quad (3)$$

Our results are reported in Table 5. Our results in Table 5, Panel A, show that foreign analysts' buy recommendations are followed by significantly positive returns for all post-recommendation periods, while local analysts' sell recommendations are followed by significantly negative returns for all post-recommendation periods. We argue that this result is

driven by the fact that foreign analysts' buy recommendations and local analysts' sell recommendations are able to generate more buy trades than their counterpart recommendations. Table 5, Panel B, also shows foreign analysts' buy recommendations and local analysts' sell recommendations significantly outperform local analysts' buy recommendations and foreign analysts' sell recommendations, respectively, for all post-recommendation periods.

Table 5. Performance of foreign and local analysts' recommendations

This table uses Equation (3) to document the performance of foreign and local analysts' buy and sell recommendations. The sample period is from July 2, 1997 to August 31, 1998. Panel A documents regression coefficient estimates of foreign and local analysts' buy and sell recommendations. While, Panel B documents the difference between 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 A. Regression coefficients for foreign and local analysts' recommendations

	1-Day Period	2-Day Period	5-Day Period	14-Day Period	28-Day Period
Foreign Buy	0.023*	0.032*	0.049***	0.035***	0.027*
Local Buy	-0.005	0.021	0.027*	0.028***	0.011
Foreign Sell	-0.001	0.003	0.008	0.001	-0.017
Local Sell	-0.022**	-0.034*	-0.051***	-0.067***	-0.118***

Panel B. Difference between returns following foreign and local analysts' recommendations

	1-Day Period	2-Day Period	5-Day Period	14-Day Period	28-Day Period
Foreign Buy – Local Buy	0.028**	0.011*	0.022***	0.007	0.016*
Foreign Sell – Local Sell	0.021***	0.037***	0.059***	0.068***	0.101***

Table 6. Optimism in analysts' recommendations

This table reports the regression coefficients for Equation (4) and Equation (5). The sample period is from July 2, 1997 to August 31, 1998.

1% significance is denoted by ***, 5% by ** and 10% by *.

	Equation (4)	Equation (5)
LOCAL	-0.036	-0.073
ANALYST		0.039**
SIZE		-0.0457***
LEVERAGE		0.005**
TRANSITION		0.045

5. Empirical tests regarding the alternate explanations

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 (2008) 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 also 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 order to gauge the validity of arguments presented by Lai and Teo (2008), we test whether there is any difference in optimism between foreign and local analysts in South Korea during the crisis period. Similar to Lai and Teo (2008), we do so by estimating a regression equation with optimism in the recommendation of analyst 'i' regarding stock 'S' on date 't' ($OPT_{S,i,t}$) as a dependent variable and a dummy variable representing whether the recommendation was issued by a local or a foreign analyst ($LOCAL_{S,i,t}$) as an independent variable.[10]

[10] Optimism variable is defined as the difference between analysts' recommendation and last month consensus recommendation (Lai and Teo, 2008).

$LOCAL_{S,i,t}$ takes the value of 1 if the analyst 'i' who issues recommendation about stock 'S' on date 't' is a local analyst and 0 otherwise. If local analysts are more optimistic than foreign analysts, we should obtain a statistically positive coefficient of $LOCAL_{S,i,t}$. In addition, we also add a number of variables to control for some of the firm-specific characteristics that can have impact on analysts' optimism. These control variables are: market capitalization of a firm ($SIZE_{S,t}$), analyst following ($ANALYST_{S,t}$), and a dummy variable representing the initial panic in the stock markets ($TRANSITION_{S,t}$). We also include industry dummies (IDUM) in our regression equation. Our regression equations take the following form:

$$OPT_{S,i,t} = \alpha + \beta_1(Local_{S,i,t}) + \varepsilon_{S,i,t} \quad (4)$$

$$OPT_{S,i,t} = \alpha + \beta_1(Local_{S,i,t}) + \beta_2(SIZE_{S,t}) + \beta_3(ANALYST_{S,t}) + \beta_4(TRANSITION_{S,t}) + \sum_{Ind}\beta^{Ind}(IDUM) + \varepsilon_{S,i,t} \quad (5)$$

Results from the estimation of Equation (4) and Equation (5) are reported in Table 6. The OLS coefficient estimates on the local analyst dummy ($LOCAL_{S,i,t}$) are insignificant for both equations. This implies that there is no significant difference in the optimism between foreign and local analysts during the crisis period.[11] In the presence of no optimism difference, arguments proposed by Lai and Teo (2008) would predict no significant difference between the buy and sell recommendations issued by foreign and local analysts. However, our results in Table 5 show that foreign analysts' buy recommendations outperform local analysts' buy recommendations and local analysts' sell recommendations outperform foreign analysts' sell recommendations. 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.

6. Conclusion

This paper shows that analysts' ability to influence investors, especially during the periods of crises, may explain the relative performance of foreign and local analysts better than the traditional information centric arguments. We argue that the ability of foreign analysts' buy recommendations and local analysts' sell recommendations to generate considerable subsequent trade is responsible for superior performance foreign analysts' buy recommendations and local analysts' sell recommendations in emerging stock markets. Our results support our arguments when they show that foreign analysts' buy recommendations and local analysts' sell recommendations generate significantly more buying and selling respectively than their counterpart recommendations (i.e. local analysts' buy recommendations and foreign analysts' sell recommendations respectively) during the Asian financial crisis. We also show that trade generating potential of foreign analysts' buy recommendations and local analysts' sell recommendations lead to better performance of these recommendations. Our 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, we rule out this argument when looking for an explanation for the performance difference.

[11] In a separate analysis, we tested for optimism difference in two other crisis-hit countries, i.e. Thailand and Indonesia. 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.

References

1. Bacmann, J. F. and Bolliger, G., (2001). Who are the Best? Local versus Foreign Analysts on the Latin American Stock Markets. Research Paper No. 75, FAME - International Center for Financial Asset Management and Engineering, Switzerland.
2. Badrinath, S. G., Gay, G. D., and Kale, J. R., (1989). Patterns of Institutional Investment, Prudence, and the Manegerial "Safety-Net" Hypothesis. The Journal of Risk and Insurance, 56(4), pp. 605-629.
3. Bae, K. H., Stultz, R., and Tan, H., (2008). Do Local Analysts Know More? A Cross-Country Study of the Performance of Local Analysts and Foreign Analysts. Journal of Financial Economics, 88(3), pp. 581-606.
4. Beneish, M. D. and Whaley, R., (1996). An Anatomy of the "S&P Game": The Effects of Changing the Rules. Journal of Finance, 51(5), pp. 1909-1930.
5. Chan, L. K. C. and Lakonishok, J., (1995). The Behavior of Stock Prices Around Institutional Trades. The Journal of Finance, 50(4), pp. 1147-1174.
6. Chang, C., (2010). Information Footholds: Isolating Local Presence as a Factor in Analyst Performance and Trading. Journal of International Money and Finance, 29(6), pp. 1094-1107.
7. Clark, J. and Berko, E., (1996). Foreign Investment Fluctuations and Emerging Market Stock Returns: The Case of Mexico. Research Paper No. 9635, Federal Reserve Bank of New York, New York.
8. Curzio, F., (1987). Awareness of Indirection. Vintage Press, New York.
9. Dhillon, U. S. and Johnson, H., (1991). Changes in the Standard and Poor's 500 List. Journal of Business, 64(1), pp. 75-85.
10. Farooq, O. (2013). Who was Informative? Performance of Foreign and Local Analysts' Stock Recommendations during the Asian Financial Crisis.

Working Paper No. 10, American University in Cairo, Cairo.
11. Froot, K. A., O'Connell, P. G., and Seasholes, M. S., (2001). The Portfolio Flows of International Investors. Journal of Financial Economics, 59(2(, pp. 151-193.
12. Garry, M. and Goetzmann, W. N., (1986). Does Delisting from the S&P 500 Affect Stock Price? Financial Analysts Journal, 42(2), pp. 64-69.
13. Goetzmann, W. N. and Massa, M., (2003). Index Funds and Stock Market Growth. Journal of Business, 76(1), pp. 1-28.
14. Gompers, P. A. and Metrick, A., (2001). Institutional Investors and Equity Prices. The Quarterly Journal of Economics, 116(1), pp. 229-259.
15. Harris, L. and Gurel, E., (1986). Price and Volume Effects Associated with Changes in the S&P 500 List: New Evidence for the Existence of Price Pressures. Journal of Finance, 41(4), pp. 815-829.
16. Higgins, H. N., (2002). Analysts' Forecasts of Japanese Firm's Earnings: Additional Evidence. The International Journal of Accounting, 37(4), pp. 371-394.
17. Kamesaka, A. and Wang. J., (2001). Foreign and Domestic Investors in Indonesia: Impact of the Asian Crisis to their Trades. Working Paper, Ryukoku University and University of New South Wales, Presented at the Ministry of Finance, Indonesia.
18. Kamesaka, A. and Wang. J., (2005). The Asian Crisis and Investor Behavior in Thailand's Equity Market. Working Paper, Ryukoku University and University of New South Wales, Presented at the American Economic Association meetings in Philadelphia.
19. Kim, J-B., Krinsky, I., and Lee, J., (1995). The Aftermarket Performance of Initial Public Offerings in Korea. Pacific-Basin Finance Journal, 3(4), pp. 429-448.
20. Lai, S. and Teo, M., (2008). Home Biased Analysts in Emerging Markets. Journal of Financial and Quantitative Analysis, 43(3), pp. 685-716.
21. Lynch, A. W, and Mendenhall, R. R., (1997). New Evidence on Stock Price Effects Associated with Changes in the S&P 500 Index. Journal of Business, 70(3), pp. 351-383.
22. Malloy, C. J., (2005). The Geography of Equity Analysis. Journal of Finance, 60(2), pp. 719-755.
23. Malmendier, U. and Shanthikumar, D., (2007). Are Small Investors Naive About Incentives? Journal of Financial Economics, 85(2), pp. 457-489.
24. Mitton, T., (2002). A Cross-Firm Analysis of the Impact of Corporate Governance on the East Asian Financial Crisis. Journal of Financial Economics, 64(2), pp. 215-241.
25. Rajan, R. G. and Zingales, L., (1998). Which Capitalism? Lessons from the East Asian Crisis. Journal of Applied Corporate Finance, 11(3), pp. 40-48.
26. Shleifer, A., (1986). Do Demand Curves for Stocks Slope Down? Journal of Finance, 41(3), pp. 579-590.
27. Singh, A., (1998). Asian Capitalism and the Financial Crisis. CEPA Working Paper Series III, No. 10, New School for Social Research, New York.
28. Sullivan, M. and Unite, A., (2001). The Influence of Group Affiliation and the Underwriting Process on Emerging Market IPOs: The Case of the Philippines. Pacific-Basin Finance Journal, 9(5), pp. 487-512.
29. Stultz, R., Bae, K. H., and Tan, H., (2008). Do Local Analysts Know More? A Cross-Country Study of the Performance of Local Analysts and Foreign Analysts. Journal of Financial Economics, 88(3), pp. 581-606.
30. Vimilsiri, P., (2001). Role of Foreign Investors in the Thai Currency Crisis of 1997. Visiting Researcher Series No. 4, Institute of Southeast Asian Studies, Singapore.