

GOVERNANCE REFORMS AND PERFORMANCE OF ANALYSTS' RECOMMENDATIONS: PRE- AND POST-CRISIS ANALYSIS FROM ASIAN EMERGING MARKETS

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Abstract

How does change in corporate governance regimes effect financial analysts? Are analysts able to incorporate the effect of better governance regimes in their recommendations? This paper aims to answer these questions by documenting the effect of corporate governance mechanisms on the performance of analysts' recommendations in Asian emerging markets during the pre-crisis and the post-crisis periods. Using a large dataset of analyst recommendations, we document that analysts were not able to generate informative recommendations during the post-crisis period (better governance regime). We report that performance of analyst recommendations deteriorated significantly during the post-crisis period relative to the pre-crisis period (poor governance regime). Our results indicate relative ineffectiveness of governance reforms initiated after the Asian financial crisis of 1997-98.

Keywords: Corporate Governance; Analyst Recommendations; Governance Reforms; Asian Financial Crisis

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1 Introduction

Prior literature highlights a strong link between improvement in corporate governance mechanisms and analyst performance. Ashbaugh and Pincus (2001), for example, show that adoption of International Accounting Standards by firms positively affect accuracy of analysts' forecasts. In another related study, Hope (2003) document that analysts' accuracy improves with the improvement in firm-level public disclosures. Lang and Lundholm (1996) also report similar findings by showing that forecast accuracy is positively related to disclosure policies. This strand of literature argues that improvement in governance mechanisms increase the reliability of disclosed information and makes it easier of for analysts to come up with accurate forecasts. An interesting observation from the prior literature is that most of the prior evidence is on the impact of governance mechanisms on the accuracy of analysts' forecasts. Not much has been written on the association between improvement in governance mechanisms and profitability of recommendations issued by analysts. This paper is an attempt to relate the two. Conventional wisdom suggests that governance mechanisms should positively affect the value of analysts' recommendations. Given that improvement in governance mechanisms enhance

quality of disclosure, it should make it easier for analysts to identify mispricing in stocks and issue value relevant recommendations.

This paper aims to document value of analysts' recommendations in two distinct periods characterized by different governance regimes. The first period in our analysis corresponds to the period immediately preceding the Asian financial crisis of 1997-98. This was the period when governance mechanisms were weak and ineffective (Johnson et al., 2000; Mitton, 2002). The second period in our analysis covers the period immediately following the Asian financial crisis. This was the period during which governance mechanisms improved due to the reforms implemented by the governments during the crisis period (Farooq and Amrani, 2013). We would like to mention here that this paper also adds to the debate on the success/failure of governance reforms initiated in the crisis-hit Asian countries after the outbreak of financial crisis in 1997-98. Prior literature presents inconclusive evidence on the effectiveness of these reforms. Jinarat and Quang (2004), for example, document strong positive impact of governance reforms on the performance of Thai firms, while Choi and Hasan (2005) document no significant effect of these reforms on the performance of Korean firms during the post-crisis period. We argue that had governance reforms been successful, information

asymmetries between analysts and firms would have reduced. Consequently, it would have improved the ability of analysts to identify undervalued and overvalued stocks during the post-crisis period and would have resulted in better performance of their recommendations. An opposite result would indicate no reduction in the information asymmetries between analysts and firms and this no effectiveness of governance reforms during the post-crisis period.

Using analysts' recommendations data from Indonesia, Malaysia, Thailand, and South Korea, we show a significant deterioration in the performance of analysts' recommendations during the post-crisis period. Our results show that the buy recommendations issued during the post-crisis period contained significantly lower value than the buy recommendations issued during the pre-crisis period. Our results indicate that analysts were not able to incorporate the effect of better governance mechanism in their buy recommendations. We also show that better governance mechanisms prevailing during the post-crisis period were also not able to improve the value of analysts' sell recommendations. Furthermore, our results show that the ability of analysts to differentiate between well-performing firms from badly-performing firms also deteriorated significantly during the post-crisis period. Jegadeesh and Kim (2006) associate the ability of analysts to differentiate between well-performing firms and badly-performing firms as a measure of performance. Our results show that, on average, analysts were not able to differentiate between well-performing firms and badly-performing firms. Our results indicate that buy and sell recommendations issued by analysts were followed by returns of the same magnitude. Furthermore, we also show that our results are robust across different sub-samples. Our results for a sub-sample consisting of recommendations issued by local analysts and a sub-sample consisting of recommendations issued by foreign analysts show that neither of the two groups benefitted from reforms. We report significant deterioration in the performance of local as well as foreign analysts during the post-crisis period.

Our results are in contrast to our expectations of improved ability of analysts to differentiate between well performing firms and badly performing firms during the post-crisis period due to the improvements in governance 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 the post-crisis recovery in some of the crisis-hit counties was carried out by industrial sector firms. For example, in South Korea, Chaebols 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, 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, 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.

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 tests our hypothesis, while Section 5 checks the robustness of our results. The paper ends with conclusions in Section 6.

2 Motivation and background

Corporate governance refers to the mechanisms that determine the way in which a firm is administered. One aspect of this administration is the disclosure of information. Prior literature reports that strength of internal as well as external governance mechanisms affect the disclosure policy of the firms. For example, Chen and Jaggi (2000) document the importance of internal governance mechanisms by showing a positive impact of independent non-executive directors on information disclosure. They note that outside directors tend to encourage firms to disclose additional information to stakeholders. Therefore, increasing the proportion of independent directors leads to more voluntary disclosure. In another related study, Ajinkya et al. (2005) document that institutional ownership in a firm leads to issuance of more accurate and timely management forecasts. They argue that it is logical for institutional investors, with huge sums of money invested in a given firm, to demand complete disclosure of information from the management. As a result, institutional ownership results in reducing non-disclosure of information. Contrary to the above studies, La Porta et al. (2000) highlight the importance of external governance mechanisms by documenting that firms headquartered in countries with poor legal protection of investors disclose less information than firms headquartered in countries with strong legal protection of investors. They argue that strong legal protection forces management to disclose truthfully. Failure to disclose properly may result in legal penalties for the firm and the management. Complementing the findings of La Porta et al. (2000), Morck et al. (2006) show that weak legal protection of private property rights makes informed risk arbitrage

in emerging markets unattractive. As a result, firm-specific information disclosure becomes ineffective and investors are tempted to trade on market-specific information.

In this paper, we argue that crisis-hit Asian countries initiated programs of governance reforms after the outbreak of financial crisis in 1997-98. These reforms were aimed at enhancing efficiency of the markets, breaking the close links between business and governments, improving transparency in the financial and corporate sectors, and removing limitations on foreign ownership. Some of the more important reforms that resulted in improving corporate governance and information environment of firms in the crisis-hit countries were as follows:

- **Board of Directors:** Prior to crisis, controlling shareholders were able to appoint almost 100% of directors. The reforms paid special attention on appointing directors who were independent of controlling shareholders. For instance, new regulations were passed to force firms to have 30% of independent directors in Indonesia, 25% of independent directors in South Korea, and 33% of independent directors in Malaysia. Furthermore, the reforms also resulted in lowering the minimum threshold shares required for minority shareholders to demand dismissal of a director. For instance, this threshold level was reduced to 0.50% in South Korea. These reforms helped in reducing agency problems were by making boards more independent.

- **Shareholders' Rights:** The reforms also enacted and amended laws and regulations in all of the crisis-hit countries to facilitate the participation of minority shareholders in decision making. Some of the new laws gave minority shareholders the right to vote on the following items: appointing and removing directors and auditors, amending firm's articles of association, vetoing transactions with related parties, and authorizing issuing share capital. Cumulative voting was also introduced to improve shareholders' rights in these countries. These reforms were important because they helped improve transparency by empowering shareholders.

- **Auditing:** The reforms paid special attention toward internal and external auditing. For instance, minimum threshold shares required for minority shareholders to demand dismissal of an internal auditor was lowered in the crisis hit countries. This limit was, for example, decreased to 0.01% in South Korea. In addition to introducing reforms regarding internal auditors, tenure of external auditors was also fixed. As a result of reforms, the maximum time an auditor can audit firm's financial statements is 5 years in Indonesia, 5 years in Thailand, and 6 years in South Korea. These reforms helped in improving financial statements by making auditors more independent.

- **Financial Statements:** The reforms were also introduced to improve disclosure levels by requiring firms to disclose quarterly financial statements and to

immediately report any information that can affect stock prices.

- **Conglomerates:** The reforms set the limits on the use of transactions between affiliated firms. Thailand, for example, requires complete disclosure of related-party transactions. Malaysia also enhanced regulations 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 are carried out on a fair and reasonable basis. In addition, advance shareholder approval is also 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. Firms are also required to report such transactions to shareholders at a general shareholders' meeting.

Given that better governance mechanisms improve disclosure of information, we argue that reforms implemented in the crisis-hit Asian countries should have a significant impact on the performance of analysts. Prior literature argues that analysts understand the implications of corporate governance for a firm's future performance. Therefore, they incorporate the information embedded in the improvement of governance mechanisms in their research (Chang et al., 2001; Ashbaugh and Pincus, 2001; Hope, 2003). This strand of literature argues that analysts, being the biggest user of information disclosed by firms, benefit the most whenever governance mechanisms improve. Byard et al. (2006), for example, document the relationship between corporate governance and analyst performance by showing that high quality governance mechanisms are associated with more accurate analyst forecasts. In another related study, Ali et al. (2007) also document similar findings when they show that family companies, which have less severe overall agency problems compared with non-family firms, have higher analyst forecast accuracy and less volatility in forecast revisions. The most important argument cited in above studies regarding the positive correlation between analyst accuracy and improvement in governance mechanisms is that analysts face lower adverse selection problems while forecasting firms with better governance mechanisms. Improvement in governance mechanisms increase the reliability of disclosed information and makes it relatively easier for analysts to identify mispricing in stocks.

If better governance mechanisms improve accuracy of analysts' research, it should also make their recommendations more informative. Loh and Mian (2006) find that analysts who issue more accurate earnings forecasts also issue more profitable stock recommendations. They show that the average return associated with the recommendations of analysts in the highest accuracy quintile exceeds the corresponding return for analysts in the lowest

accuracy quintile by 1.27% per month. We argue that accurate analysts have better inputs that facilitate profitable stock recommendations. Our arguments are consistent with prior literature that argues that analysts set recommendations by developing explicit or implicit valuation models (Bradshaw, 2004; Conrad et al., 2006). Extent literature documents that analysts collect and process firm-specific information to generate the recommendations models. For example, Clarke et al. (2006) document that analysts revise their recommendations downward as bankruptcy approaches.

Consistent with the above findings, we argue that if governance reforms initiated after the outbreak of crisis in 1997-98 were successful, they should have improved the information environment of a firm. As a result, accuracy and forecasting ability of analysts should have improved, thereby resulting in more informative recommendations during the post-crisis period.

H1: Value of analyst recommendations improved during the post-crisis period

However, if these reforms were ineffective, no significant change in the information value of recommendations should be observed during the post-crisis period relative to the pre-crisis period.

H1: Value of analyst recommendations did not improve during the post-crisis period

3 Data

This paper documents on the performance of analysts' recommendations in Indonesia, Malaysia, Thailand, and South Korea during the period preceding and the period following the Asian financial crisis of 1997-98. The pre-crisis period covers the period between January 1, 1996 to July 1, 1997 and the post-crisis period spans from September 1, 1998 to December 31, 1999.²³ We will, briefly, discuss the data in the following sub-sections.

3.1 Stock prices and market index

We extract the stock price and the 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 the subsequent 14, 28, 42, and 56 days for the firms represented in the analyst recommendations dataset. We use the stock price data and the market index data to calculate the cumulative market-adjusted returns (Jegadeesh and Kim, 2006).

²³ The choice of time period is driven by the previous literature that identifies these periods as the pre-crisis and the post-crisis periods (Farooq, 2013). We exclude the crisis period, July 2, 1997 to August 31, 1998, from our analysis, as it was the period during which reforms were initiated. Given that it is hard to predict the impact of reforms on analysts during the implementation phase, we drop this period from our analysis.

3.2 Analyst recommendations

We obtain analyst recommendations data from the IBES Detail International History-Recommendation file. 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 Asian emerging markets prefer to use 3-point rating scheme. Most of them rate firms as Buy, Hold, or Sell. In such cases, the IBES maps them to 1, 3, and 5, respectively, in their 5-point rating system. Due to wide use of 3-point rating scheme, there are considerably few buy and underperform recommendations in our sample. Following Lai and Teo (2008), we aggregate the IBES ratings of 1 and 2 as buy, and 4 and 5 as sell in this study.

Table 1, Panel A and Panel B, reports summary statistics for analyst recommendations during the pre-crisis and the post-crisis periods.²⁴ Panel A documents summary statistics for analyst recommendations in different countries, while Panel B shows similar statistics in each industrial sector. As is expected, Table 1, Panel A, shows that analysts prefer to issue buy recommendations more than sell recommendations in all countries during the pre-crisis and the post-crisis periods. For instance, analysts issued more than 50% of their recommendations as buy recommendations in Malaysia during the pre-crisis period. Furthermore, Table 1, Panel B, shows that firms from ten different industries are represented in our sample.²⁵ It also shows that analysts preferred firms from Utilities sector and Consumer Services sector in Asian emerging markets during the pre-crisis and the post-crisis periods.

3.3 Control variables

This paper uses a number of firm-specific characteristics as control variables. The control variables used in the regression analysis are: Log of firms' market capitalization on the day of recommendation (SIZE), total number of analysts following a stock (ANALYST), market to book ratio on the day of recommendation (MBR), and optimism in analyst recommendation (OPT). All of these variables can affect performance of analyst recommendations to varying degrees.

²⁴ In this table, we characterize all strong buy and buy as buy recommendations, and all underperform and sell as sell recommendations.

²⁵ Our classification of industries is based on Industry Classification Benchmark (ICB). ICB classification has been created by FTSE.

Table 1²⁶. Type of recommendations issued by foreign and local analysts

Panel A: Type of recommendations in different countries

	Pre-crisis Period			Post-crisis Period		
	Buy	Hold	Sell	Buy	Hold	Sell
Indonesia	418 (44.23%)	236 (24.97%)	291 (30.79%)	460 (45.95%)	268 (26.77%)	273 (27.27%)
Malaysia	1782 (51.71%)	923 (26.78%)	741 (21.50%)	1482 (48.13%)	812 (26.37%)	785 (25.50%)
Thailand	659 (34.41%)	592 (30.91%)	664 (34.67%)	708 (45.74%)	392 (25.32%)	448 (28.94%)
South Korea	622 (32.70%)	770 (40.48%)	510 (26.81%)	1376 (35.07%)	1475 (37.59%)	1073 (27.34%)

Panel C: Type of recommendations in different industries

	Pre-crisis Period			Post-crisis Period		
	Buy	Hold	Sell	Buy	Hold	Sell
Oil and Gas	42 (37.84%)	41 (36.94%)	28 (25.23%)	91 (53.22%)	50 (29.24%)	30 (17.54%)
Basic Materials	243 (35.53%)	216 (31.58%)	225 (32.89%)	406 (41.99%)	318 (32.89%)	243 (25.13%)
Industrials	811 (42.42%)	590 (30.86%)	511 (26.73%)	778 (39.78%)	593 (30.32%)	585 (29.91%)
Consumer Goods	532 (41.18%)	411 (31.81%)	349 (27.01%)	741 (41.84%)	576 (32.52%)	454 (25.64%)
Healthcare	57 (30.00%)	69 (36.32%)	64 (33.68%)	52 (34.67%)	57 (38.00%)	41 (27.33%)
Consumer Services	408 (48.75%)	226 (27.00%)	203 (24.25%)	465 (51.27%)	249 (27.45%)	193 (21.28%)
Telecommunication	145 (42.40%)	93 (27.19%)	104 (30.41%)	184 (42.59%)	135 (31.25%)	113 (26.16%)
Utilities	135 (51.14%)	77 (29.17%)	52 (19.70%)	237 (50.00%)	142 (29.96%)	95 (20.04%)
Financials	722 (44.82%)	468 (29.05%)	421 (26.13%)	622 (41.19%)	461 (30.53%)	427 (28.28%)
Technology	83 (37.39%)	76 (34.23%)	63 (28.38%)	184 (43.71%)	125 (29.69%)	112 (26.60%)

²⁶ This table presents basic descriptive statistics for the type of recommendations issued by analysts in Indonesia, Malaysia, Thailand and South Korea during the pre-crisis and the post-crisis periods. The pre-crisis period covers the period between January 1, 1996 to July 1, 1997 and the post-crisis period spans from September 1, 1998 to December 31, 1999.

Table 2 documents the descriptive statistics for our control variables. Our results show that analyst following increased during the post-crisis period. This indicates development of brokerage industry in the crisis-hit countries. Given that crisis resulted in

significant reduction in market values, our results show that analysts issued recommendations for firms with smaller market to book ratios during the post-crisis period relative to the pre-crisis period.

Table 2. Descriptive statistics for control variables

	Pre-crisis Period	Post-crisis Period
ANALYST	10.1268	12.7333
OPT	4.2080	4.4930
SIZE	2.6893	1.6012
MBR	0.3635	-0.6064

The following table documents the descriptive statistics for control variables used in this study. The pre-crisis period covers the period between January 1, 1996 to July 1, 1997 and the post-crisis period spans from September 1, 1998 to December 31, 1999. The countries represented in our analysis are Indonesia, Malaysia, Thailand, and South Korea.

4 Empirical tests

The most obvious question, while analyzing recommendations, is whether or not recommendations predict returns. That is, do analysts uncover valuable information in their recommendations? If so, their recommendations should predict future stock returns (Womack, 1996; Stickel, 1995). However, if the recommendation is built on information that is already known to the public, there should be no relationship between the recommendations and the 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 the performance of analyst recommendations improved during the post-crisis period.

In order to analyze the improvement/deterioration in the performance of analyst recommendations, we estimate a regression equation with cumulative market-adjusted returns following analyst recommendations (CMAR) as an independent variable and four dummy variables representing analysts' buy and sell recommendations during the pre-crisis and the post-crisis periods (PREBUY, PRESELL, POSTBUY, POSTSELL) as dependent variables.²⁷ If buy recommendations issued during the post-crisis period are more informative than buy recommendations issued during the pre-crisis period, we should expect the coefficient estimate of POSTBUY to be larger than the coefficient estimate of PREBUY. While, the coefficient estimate of

POSTSELL to be smaller than the coefficient estimate of PRESELL, if sell recommendations issued during the post-crisis period are more informative than sell recommendations issued during the pre-crisis period. Furthermore, we also add a number of variables that control for different firm-specific characteristics. For instance, optimism (OPT) is added to control for optimistic bias in analyst recommendations. In addition, analyst following (ANALYST) and size of a firm (SIZE) is added to control for the information environment of a firm, while market to book ratio (MBR) is added to control for investors' interest in a stock. We also added a dummy variable (TRANSITION) to capture the transition from the pre-crisis period to the crisis period and from the crisis period to the post-crisis period.²⁸ We also include industry dummies (IDUM) and country dummies (CDUM) in our regression equation. Our final regression equation takes the following form:²⁹

²⁸ We measure OPT as the difference between analysts' recommendation and last month's consensus recommendation (Lai and Teo, 2008). ANALYST is the total number of analysts issuing recommendations for a firm during that year. SIZE is defined as the log of market capitalization of a firm on the day of recommendation. TRANSITION 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.

²⁹ 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. Our results from this sample are qualitatively the same as the results from the full sample.

²⁷ PREBUY takes the value of 1 if recommendation is a buy and is issued during the pre-crisis period and 0 otherwise, PRESELL takes the value of 1 if recommendation is a sell and is issued during the pre-crisis period and 0 otherwise, POSTBUY takes the value of 1 if recommendation is a buy and is issued during the post-crisis period and 0 otherwise, and POSTSELL takes the value of 1 if recommendation is a sell and is issued during the post-crisis period and 0 otherwise.

$$\begin{aligned}
\text{CMAR} = & \alpha + \beta_1(\text{PREBUY}) + \beta_2(\text{PRESELL}) + \beta_3(\text{POSTBUY}) + \beta_4(\text{POSTSELL}) \\
& + \beta_5(\text{ANALYST}) + \beta_6(\text{OPT}) + \beta_7(\text{SIZE}) + \beta_8(\text{MBR}) + \beta_9(\text{TRANSITION}) \\
& + \sum_{\text{Ctry}} \beta^{\text{Ctry}}(\text{CDUM}) + \sum_{\text{Ind}} \beta^{\text{Ind}}(\text{IDUM}) + \varepsilon
\end{aligned} \tag{1}$$

Table 3, Panel A through Panel C, documents various measures representing the performance of analyst recommendations during the pre-crisis and the post-crisis periods. Table 3, Panel A, shows that it was only during the pre-crisis period that buy recommendations were consistently followed by significant returns. We report significant and positive coefficient of PREBUY for all for all post-recommendation periods. In contrast to buy recommendations issued during the pre-crisis period, our results in Table 3, Panel A, show that buy recommendations issued during the post-crisis period were not followed by significant and positive returns. The only exception is the significant and positive return generated during the 28-day post-recommendation period during the post-crisis period. It indicates relatively lower performance of buy recommendations during the post-crisis period. Our results also show that sell recommendations did not do well during both periods. We report insignificant coefficient of PRESELL and POSTSELL for all post-recommendation periods. The only exception is the significant and negative return generated during the 28-day post-recommendation period during the post-crisis period. Our results indicate that governance reforms initiated during the crisis period were not able to reduce information asymmetries for analysts. Our assertion regarding the failure of governance reforms depends on our understanding that successful reforms should be able to reduce information asymmetries, thereby resulting in improvement in the performance of analyst. Prior literature argues that analysts tend to become more accurate as information asymmetries go down (Ashbaugh and Pincus, 2001; Hope, 2003). Since our results do not show improvement in the performance of analyst recommendations, we argue that governance reforms did not produce their intended results, at least during the initial post-reform years.

Table 3, Panel A, indicates superior performance of buy recommendations during the pre-crisis period relative to the post-crisis period, and also indicates no change in the performance of sell recommendations across the pre-crisis and the post-crisis periods. However, it does not show whether there exist a significant difference between the performances of recommendations across the two periods. Table 3, Panel B, document this difference. We use the Wald's test to document whether there is a significant difference between the coefficient estimates of PREBUY and POSTBUY, and the coefficient estimates of PRESELL and POSTSELL. Our results show that there exist a significant difference between the buy recommendations issued during the pre-crisis period and the buy recommendations issued during the

post-crisis period. We report that this significant difference exist for all post-recommendation periods. In case of sell recommendations, our results show no significant difference between the sell recommendations issued during the pre-crisis period and the sell recommendations issued during the post-crisis period. These results, further, confirm our previous assertion of no impact of governance reforms on the information asymmetries.

The ability of analysts to differentiate between well-performing firms from badly-performing firms can also indicate whether the reforms were successful or not. Jegadeesh and Kim (2006) indicate this ability of analysts to document their performance. Table 3, Panel C, use the Wald's test to document whether there is a significant difference between the coefficient estimates of PREBUY and PRESELL, and the coefficient estimates of POSTBUY and POSTSELL. Our results show that analysts were successfully differentiating between well-performing firms and badly-performing firms during the pre-crisis period. We report significant and positive difference between PREBUY and PRESELL. We also show that the ability of analysts to differentiate between well-performing firms and badly-performing firms decreased significantly during the post-crisis period. We show that significant and positive difference between POSTBUY and POSTSELL exist only for 28-day and 42-day post-recommendation period. These results also confirm our previous claim of no significant impact of governance reforms on the information asymmetries.

5 Robustness checks

5.1 Performance of local analyst recommendations

In this section, we document the effect of governance reforms on local analysts by re-estimating Equation (1) using recommendations issued by local analysts. Given that governance reforms improve the information environment, we should expect the performance of local analysts to improve significantly during the post-crisis period. Table 4, Panel A through Panel C, reports various measures representing the performance of local analyst recommendations during the pre-crisis and the post-crisis periods. The regression coefficients in Table 4, Panel A, indicate that the performance of buy recommendations issued by local analysts decreased substantially during the post-crisis period. In fact, we report significant and negative coefficient of POSTBUY for 14-day post-recommendation period. However, our results indicate substantial improvement in the performance of sell

recommendations issued by local analysts during the post-crisis period. Contrary to the pre-crisis period, we show that the sell recommendations issued by local analysts generated significant and negative returns for 28-day and 42-day post-recommendation period. Surprisingly, sell recommendations issued by local analysts were followed by significant and positive returns for the post-recommendation period of 14-day and 56-day during the pre-crisis period. Consistent with the findings of Table 3, we show in Table 4, Panel B, that buy recommendations issued during the pre-crisis period were always more informative than buy recommendations issued during the post-crisis period. We report significant and positive difference

between PREBUY and POSTBUY. Contrary to our previous finding, we show that local analysts were able to generate more valuable sell recommendations during the post-crisis period. Our results show significant and positive difference between PRESELL and POSTSELL, indicating that sell recommendations were followed by more negative returns during the post-crisis period. Furthermore, Table 4, Panel C, shows that the ability of local analysts to differentiate between well-performing firms and badly-performing firms remain constant during our sample period. It, again, indicates that reforms were not able to reduce information asymmetries for analysts.

Table 3. Performance of analysts' recommendations

Panel A: Regression coefficients

	14-Day Period	28-Day Period	42-Day Period	56-Day Period
PREBUY	0.0086***	0.0170***	0.0160***	0.0133***
PRESELL	-0.0004	-0.0025	-0.0026	0.0011
POSTBUY	-0.0020	0.0063*	0.0073	0.0033
POSTSELL	-0.0042	-0.0104***	-0.0074	0.0007
ANALYST	0.0007***	0.0008***	0.0007***	0.0010***
OPT	-0.0001	-0.0024**	-0.0008	0.0019
SIZE	-0.0060***	-0.0097***	-0.0123***	-0.0173***
MBR	-0.0018***	-0.0034***	-0.0049***	-0.0057***
TRANSITION	0.0023	0.0102***	0.0127***	0.0141***
Industry Dummies	Yes	Yes	Yes	Yes
Country Dummies	Yes	Yes	Yes	Yes
No. of Observations	13663	13703	13710	13766
Adjusted-R ²	0.018	0.024	0.024	0.030
F-Value	12.09	17.43	18.63	23.59

Panel B: Performance of recommendations across the pre-crisis and the post-crisis periods

Post-recommendation Period	PREBUY – POSTBUY	PRESELL – POSTSELL
14-Day Period	0.0106***	0.0038
28-Day Period	0.0107***	0.0079*
42-Day Period	0.0087**	0.0048
56-Day Period	0.0100**	0.0004

Panel C: Performance of recommendations within the pre-crisis and the post-crisis periods

Post-recommendation Period	PREBUY – PRESELL	POSTBUY – POSTSELL
14-Day Period	0.0090***	0.0022
28-Day Period	0.0195***	0.0167***
42-Day Period	0.0186***	0.0147**
56-Day Period	0.0122*	0.0026

This table documents the performance of analysts' recommendations in Indonesia, Malaysia, Thailand, and South Korea during the pre-crisis and the post-crisis periods using Equation (1). The pre-crisis period covers the period between January 1, 1996 to July 1, 1997 and the post-crisis period spans from September 1, 1998 to December 31, 1999. 1% significance is denoted by ***, 5% by ** and 10% by *.

Table 4. Performance of local analysts' recommendations**Panel A: Regression coefficients**

	14-Day Period	28-Day Period	42-Day Period	56-Day Period
PREBUY	0.0114***	0.0238***	0.0237***	0.0190***
PRESELL	0.0077*	0.0037	0.0098	0.0169*
POSTBUY	-0.0083**	0.0026	0.0026	-0.0019
POSTSELL	-0.0043	-0.0177***	-0.0180***	-0.0053
ANALYST	0.0009***	0.0009***	0.0008***	0.0010***
OPT	0.0003	-0.0038***	-0.0013	0.0011
SIZE	-0.0064***	-0.0096***	-0.0118***	-0.0165***
MBR	-0.0028***	-0.0054***	-0.0082***	-0.0087***
TRANSITION	-0.0010	0.0103***	0.0168***	0.0202***
Industry Dummies	Yes	Yes	Yes	Yes
Country Dummies	Yes	Yes	Yes	Yes
No. of Observations	7003	7068	7070	7090
Adjusted-R ²	0.026	0.030	0.030	0.036
F-Value	10.27	12.76	13.20	15.13

Panel B: Performance of recommendations across the pre-crisis and the post-crisis periods

Post-recommendation Period	PREBUY – POSTBUY	PRESELL – POSTSELL
14-Day Period	0.0197***	0.0120***
28-Day Period	0.0212***	0.0214***
42-Day Period	0.0211***	0.0278***
56-Day Period	0.0209***	0.0222**

Panel C: Performance of recommendations within the pre-crisis and the post-crisis periods

Post-recommendation Period	PREBUY – PRESELL	POSTBUY – POSTSELL
14-Day Period	0.0037	-0.0040
28-Day Period	0.0201***	0.0203***
42-Day Period	0.0139*	0.0206**
56-Day Period	0.0021	0.0034

This table documents the performance of local analysts' recommendations in Indonesia, Malaysia, Thailand, and South Korea during the pre-crisis and the post-crisis periods using Equation (1). The pre-crisis period covers the period between January 1, 1996 to July 1, 1997 and the post-crisis period spans from September 1, 1998 to December 31, 1999. 1% significance is denoted by ***, 5% by ** and 10% by *.

5.2 Performance of foreign analyst recommendations

In this section, we re-estimate Equation (1) to document the effect of governance reforms on foreign analysts. Due to their cross-border locations, foreign analysts rely primarily on the publicly disclosed information. Any improvement in the publicly disclosed information should result in improving their performance. Table 5, Panel A through Panel C, reports various measures representing the performance of foreign analyst recommendations during the pre-crisis and the post-crisis periods. The regression coefficients reported in Table 5, Panel A, indicate that the performance of buy recommendations issued by foreign analysts remained, more or less, unchanged. We report similar result for sell recommendations issued by foreign analysts. These results indicate, as before, no significant impact of governance reforms on the performance of analysts. Table 5, Panel B,

confirm that there was no significant difference between the performance of foreign analyst buy recommendations during the pre-crisis and the post-crisis periods. However, we report improvement in sell recommendations issued by foreign analysts during the post-crisis period. We report significant difference between PRESELL and POSTSELL, indicating that sell recommendations issued by foreign analysts generated more negative returns during the post-crisis period relative to the returns generated during the pre-crisis period. Furthermore, Table 5, Panel C, shows that the ability of foreign analysts to differentiate between well-performing firms and badly-performing firms reduced substantially during the post-crisis period. We report no significant difference between POSTBUY and POSTSELL. It, again, indicates that reforms were not able to reduce information asymmetries for analysts.

Table 5. Performance of foreign analysts' recommendations**Panel A: Regression coefficients**

	14-Day Period	28-Day Period	42-Day Period	56-Day Period
PREBUY	0.0052*	0.0093**	0.0090*	0.0076
PRESELL	-0.0063*	-0.0036	-0.0080	-0.0061
POSTBUY	0.0048	0.0107**	0.0128*	0.0085
POSTSELL	-0.0030	0.0037	0.0126	0.0117
ANALYST	0.0002	0.0003*	0.0003	0.0007**
OPT	-0.0002	-0.0001	0.0003	0.0032
SIZE	-0.0060***	-0.0106***	-0.0139***	-0.0187***
MBR	0.0014***	-0.0020***	-0.0026***	-0.0038***
TRANSITION	0.0028	0.0078***	0.0066*	0.0062
Industry Dummies	Yes	Yes	Yes	Yes
Country Dummies	Yes	Yes	Yes	Yes
No. of Observations	6660	6635	6640	6676
Adjusted-R ²	0.008	0.016	0.020	0.025
F-Value	3.46	5.91	7.61	9.92

Panel B: Performance of recommendations across the pre-crisis and the post-crisis periods

Post-recommendation Period	PREBUY – POSTBUY	PRESELL – POSTSELL
14-Day Period	0.0004	-0.0033
28-Day Period	-0.0014	-0.0073
42-Day Period	-0.0038	-0.0206***
56-Day Period	-0.0009	-0.0178*

Panel C: Performance of recommendations within the pre-crisis and the post-crisis periods

Post-recommendation Period	PREBUY – PRESELL	POSTBUY – POSTSELL
14-Day Period	0.0115**	0.0078
28-Day Period	0.0129*	0.0070
42-Day Period	0.0170**	0.0002
56-Day Period	0.0137	-0.0032

This table documents the performance of foreign analysts' recommendations in Indonesia, Malaysia, Thailand, and South Korea during the pre-crisis and the post-crisis periods using Equation (1). The pre-crisis period covers the period between January 1, 1996 to July 1, 1997 and the post-crisis period spans from September 1, 1998 to December 31, 1999. 1% significance is denoted by ***, 5% by ** and 10% by *.

5.3 Performance of analyst recommendations for small and large firms

In this section, we re-estimate Equation (1) for sub-samples of large and small firms. Small firms have higher information asymmetries and therefore any governance reform should improve the predicting power of analysts more for these firms than the large firms. Surprisingly, our results in Table 6, Panel A, show that recommendations issued by analysts were more informative for small firms than large firms. We report, mostly, insignificant coefficients for PRESELL, POSTBUY, and POSTSELL for all post-recommendation periods for large firms. The only exception is PREBUY, which was significant and positive. In case of small firms, analyst recommendations were, mostly, followed by significant returns. The only exception is PRESELL, which was insignificant for all post-recommendation

periods. Similar to previous findings, our results show that the buy recommendations issued during the pre-crisis period were always greater than buy recommendations issued during the post-crisis period for all post-recommendation periods. We also show that performance of sell recommendations remained unchanged for both sub-samples during both periods. It indicates that governance reforms were not able to improve analyst performance for both sub-samples. Furthermore, we show that the ability of analysts to differentiate between well-performing firms and badly-performing firms remained unchanged during our sample period. For instance, the magnitude of the difference between PREBUY and PRESELL is almost the same as the difference between POSTBUY and POSTSELL.

Table 6. Performance of analysts' recommendations for sub-samples of large and small firms

Panel A: Regression coefficients

	Large Firm				Small Firms			
	14-Day Period	28-Day Period	42-Day Period	56-Day Period	14-Day Period	28-Day Period	42-Day Period	56-Day Period
PREBUY	0.0033	0.0164***	0.0172***	0.0058	0.0132***	0.0188***	0.0185***	0.0251***
PRESELL	0.0022	-0.0020	-0.0009	0.0088	-0.0013	-0.0012	-0.0013	-0.0026
POSTBUY	-0.0128***	-0.0007	0.0037	-0.0090	0.0069**	0.0117***	0.0087	0.0132*
POSTSELL	0.0003	-0.0063	-0.0048	0.0123	-0.0072*	-0.0133***	-0.0096	-0.0110
ANALYST	0.0010***	0.0013***	0.0011***	0.0012***	0.0008***	0.0010***	0.0013***	0.0021***
OPT	0.0031***	-0.0009	0.0001	0.0061**	-0.0025***	-0.0033**	-0.0016	-0.0020
SIZE	-0.0012	-0.0076***	-0.0095***	-0.0121***	-0.0152***	-0.0237***	-0.0385***	-0.0605***
MBR	-0.0031***	-0.0049***	-0.0066***	-0.0071***	-0.0004	-0.0015**	-0.0028***	-0.0035***
TRANSITION	0.0069***	0.0167***	0.0170***	0.0263***	-0.0020	0.0037	0.0071*	0.0006
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of Observations	6803	6845	6844	6885	6860	6858	6866	6881
Adjusted-R ²	0.021	0.027	0.027	0.034	0.013	0.019	0.031	0.042
F-Value	8.72	11.66	12.27	14.62	4.37	8.61	9.03	11.43

Panel B: Performance of recommendations across the pre-crisis and the post-crisis periods

Post-recommendation Period	Large Firms		Small Firms	
	PREBUY – POSTBUY	PRESELL – POSTSELL	PREBUY – POSTBUY	PRESELL – POSTSELL
14-Day Period	0.0161***	0.0019	0.0063**	0.0059
28-Day Period	0.0171***	0.0043	0.0071*	0.0121**
42-Day Period	0.0135**	0.0039	0.0098**	0.0083
56-Day Period	0.0148**	-0.0035	0.0119**	0.0084

Panel C: Performance of recommendations within the pre-crisis and the post-crisis periods

Post-recommendation Period	Large Firms		Small Firms	
	PREBUY – PRESELL	POSTBUY – POSTSELL	PREBUY – PRESELL	POSTBUY – POSTSELL
14-Day Period	0.0011	-0.0131**	0.0145***	0.0141***
28-Day Period	0.0184**	0.0056	0.0200***	0.0250***
42-Day Period	0.0181*	0.0085	0.0198**	0.0183**
56-Day Period	-0.0030	-0.0213*	0.0277***	0.0242**

This table documents the performance of analysts' recommendations for sub-samples of large and small firms in Indonesia, Malaysia, Thailand, and South Korea during the pre-crisis and the post-crisis periods using Equation (1). The pre-crisis period covers the period between January 1, 1996 to July 1, 1997 and the post-crisis period spans from September 1, 1998 to December 31, 1999. 1% significance is denoted by ***, 5% by ** and 10% by *.

6 Conclusion

This paper documents that analyst recommendations were characterized by lower performance during the period following the Asian financial crisis of 1997-98 in Indonesia, Malaysia, Thailand, and South Korea. The observed pattern of lower performance of analyst recommendations during the pre-crisis period was pervasive across different sub-samples. We argue that lower performance of analyst recommendation indicates lower success (or failure) of governance reforms initiated during the crisis period in the crisis-hit countries. Had governance reforms been successful, we should have expected improvement in information environment of firms. Improved information environment lowers the information asymmetries and should result in improving performance of analyst recommendations. Our arguments are consistent with Ashbaugh and Pincus (2001) and Hope (2003) who show that better information environment improves analyst performance. Our results are in contrast with the findings of Farooq and Amrani (2013) who argue that reforms initiated in the crisis-hit Asian countries were able to reduce information asymmetries for analysts.

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