Analyst and Momentum in Emerging Markets

Hua Wen*

Department of Finance and Accounting

National University of Singapore

g0201944@nus.edu.sg

Tel: 0065-90462795

Abstract

Using stock data from 16 emerging markets (1990 to 2002), we conduct an out-of-sample test for the sources of momentum profitability. Specifically, this paper examines the role of financial analyst in the exhibited stock return continuation among emerging markets. Consistent with the predictions of the gradual information diffusion theory (Hong and Stein, 1999), our evidence indicates that momentum strategies are most profitable in small firms, firms with low analyst coverage. More interestingly, we find that the change in analyst following, and analyst forecast dispersion can help explain stock return momentum.

Key words: analyst coverage, forecast dispersion, momentum

*I am especially grateful to A/P Allaudeen Hameed, for his invaluable guidance and encouragement. Thanks also to the seminar participants at NUS for helpful comments and suggestions. And thanks to IBES for providing detailed analyst information. All remaining errors are mine.

1. Introduction

Recent empirical finance research has documented one interesting return pattern, namely, return continuation, which challenges the efficient market hypothesis. Most typically, Jegadeesh and Titman (1993) showed that stock returns are positively correlated at short or medium horizons: momentum strategies that buy prior winners and sell prior losers make profit about 1 percent per month over the following 12 months.

Now there is an ongoing debate regarding the source for the predictability of stock return based on past information. Some researchers attribute it to data snooping, but this is unlikely given the abundant empirical evidence of momentum profit, which is economically large as well as statistically reliable[1]. Rouwenhorst (1998, 1999) presented international return continuation evidence, using the data of 12 European markets form 1978 to 1995, and data of 20 emerging markets from 1982 to1997 respectively. Chan, Hameed, and Tong (2000) reported the profitability of momentum strategies implemented on international equity market indices.

Some have argued from the point of view of risk. For example, Conrad and Kaul (1998) argued that momentum profits could be entirely due to cross-sectional variation in expected returns. Chordia and Shivakumar (2002) demonstrated that macroeconomic risk drives the momentum in U.S. by projecting momentum profits on lagged macroeconomic variables. However, the findings of Jegadeesh and Titman (2001) are inconsistent with Conrad and Kaul hypothesis. Furthermore, the three-factor model of Fama and French fails to explain the momentum (Fama and French, 1996). Griffin et al (2003), in their

[1] Chui, Titman, and Wei (2000) documented that momentum exists in Asian Markets except for Japan and Korea. Moskowitz and Grinblatt (1999) showed that industry momentum is large. Also, Lee and Swaminathan (2000) showed that momentum is more prevalent in stocks with high turnover. See more examples of momentum in Grundy and Martin (2000) and Jegadeesh and Titman (2001).

study of 40 markets, show that neither macroeconomic variables nor economic states (good or bad) have explanatory power in the momentum profits. In addition, the return reversals over the 1- to 5-year horizons do not support the risk-based explanation of momentum profit.

Recent papers have argued that momentum premium arises because of investors' psychological biases when faced with information. Under the behavioral approach, the classical assumptions of strict rationality and unlimited computational capacity of the investors is relaxed[2]. Barberis et al (1998) showed that conservatism bias coupled with representativeness of agents leads to medium term under-reaction and eventually overreaction[3]. While in Daniel et al (1998), overconfidence and self-attribution of agents reconcile the two return patterns[4]. Rather than focusing on the psychology of the representative agents, Hong and Stein (1999) propose a gradual information diffusion model by emphasizing on the interaction between two types of boundedly rational agents[5]. From a practical angle, Hong and Stein's (1999) model gives constructive suggestions to market regulators in their effort to develop an efficient market, since there is space for

[2] Moreover, Slezak (2003) provides a model showing that " irrational agents will persist and their trades will cause predictability in equilibrium" even in the presence of rational investors who can "perfectly identify deviations from fundamental values" . " in the absence of rational traders, the trades of the irrational investors generate predictable time-series variation in returns,…, under every weak conditions, namely the existence of fundamental risk and risk aversion of rational traders, irrational traders will affect the equilibrium and predictable time-series will persist…the effects of existing behavioral models that either do not have rational agents or limit dynamic strategies are robust to the inclusion of fully rational dynamic agents."

[3] Investors subject to conservatism inadequately update their beliefs in face of new information that has high weight but weak strength. Meanwhile, due to representative heuristic bias, investors show an excessive attention to the strength of particularly salient evidence (say, a continuous pattern of notably high earnings growth) in spite of its relatively low weight.

[4] Investors attribute ex post success to their ability and ex post failure to bad luck.

[5] Two types of boundedly rational agents: "newswatchers" who make forecasts conditioning on their private information, but not current or past prices, and "momentum traders" who form simple forecasts solely based on most recent price changes. Under the key assumption of this model that private information diffuses gradually across the newswatcher population, new information only get partially incorporated into prices at any given time, which leads to underreaction. Thereby momentum traders earn profit in short run by taking advantage of the underreaction from newswatchers, and lose money in the long run when price finally reverses to its fundamental value.

them to improve the information diffusion process, especially in emerging markets. Moreover, it is an interesting academic topic to examine the robustness of gradual information diffusion theory using various datasets and proxies for the information diffusion rate[6].

This study conducts an out-of-sample test of the gradual information diffusion theory using the data from emerging markets. Hong, Lim and Stein (2000), provided evidence in support of the theory by using U.S. data and using size and residual analyst coverage as proxies for the rate of information diffusion. Doukas and McKnight (2003) showed that the gradual information diffusion theory holds well in European markets. Although the empirical evidence from both Hong et al.(2000), and Doukas and McKnight (2003) supports the hypotheses of gradual information diffusion, it is plausible that the phenomenon may come from the correlation between European and US markets. Thus, the gradual information diffusion story may not hold for other relatively isolated markets, such as emerging markets. Historically, there has been a low correlation between the emerging markets and other stock markets[7]. Rouwenhorst (1999) argues that the relative segmentation of emerging markets provides a unique opportunity for examining cross-sectional variation of stock returns: "if the return factors in a group of relatively isolated markets are the same as those found in the developed markets, it becomes more evident that the factors are fundamentally related to the way by which investors set prices in financial markets around the world."

[6] Hong and Stein (1999) suggests that for a theory to hold convincingly, it should at least be able to make a number of further predictions that can be used in "out of sample" testing and that can ultimately be validated by empirical studies.

[7] Bekaert and Harvey (1995) find that despite the recent substantial inflows of foreign capital, some emerging equity markets have become more segmented from world capital markets.

One of the implications of gradual information diffusion theory by Hong and Stein (1999) is that the momentum strategies should be most profitable for those stocks for which firm-specific information moves most slowly across the investing public. It is reasonable to assume that information about small firms delivers at a slower rate compared to large firms[8]. However, size is not a clear proxy since it may also capture a variety of other factors, such as the arbitrage capacity[9]. Another potential proxy for intensity of information dissemination is the residual analyst coverage (the analyst coverage after controlling for size). Using data of US market, Hong et al. (2000) have shown that momentum strategies work particularly well among small stocks and stocks with low analyst coverage.

To examine the marginal contribution of analyst coverage in explaining momentum, we also look into the relationship between momentum and changes in analyst coverage. McNichols and O'Brien (1997) have found that analysts are more likely to start following firms when they are optimistic about the firms' short term prospects. This observation, coupled with Womack's (1996) evidence on stock price drift in response to analyst recommendations, indicates that changes in analyst coverage can be linked to future returns. More private information may help analyst to make a more likely correct estimations while accuracy of forecasts could be the possible criteria to evaluate the analyst performance. Therefore, analysts are more likely to initialize their following when they have private information about the firm. On the contrary, analysts may quit

[8] As argued by Hong, Lim, and Stein (2000), in the context of fixed costs of information acquisition, investors are more likely to make greater efforts to learn about the stocks in which they can take large positions. It is possible that demand for the information of large firms is high, thus more analyst would like to follow large firms to help get the information diffused.

[9] Hong et al (2000) argues that " whatever behavioral phenomenon is driving positive serial correlation in returns, less arbitrage means that it will have a bigger impact in small stocks, leading us to overstate the importance of gradual information flow as the specific mechanism at work." Since most firms in emerging markets are relatively small, size may not be a good proxy for rate of information diffusion.

following when private information about the firm is no longer available. The decreasing (or increasing) analyst coverage attached to a firm indicates less (or more) private information about the firm. And the whole information set will diffuse faster (or more slowly) among investors, which leads to less (or more) momentum. It leads to our hypothesis in this paper: Momentum profits will be more pronounced in firms with increasing analyst coverage.

Besides residual analyst coverage, we postulate that forecast dispersion can be viewed as another potential proxy for the rate of information diffusion. Diether, Malloy, and Scherbina (2002) argue that the correct interpretation of dispersion in analysts' forecasts should be a proxy for the differences in opinion about a stock[10]. From the findings of Williams (1977) and Goetzmann and Massa (2001) we infer that heterogeneous beliefs can affect aggregate market returns. Furthermore, we can conjecture that disagreement among market participants may also affect the individual stock return. Moreover, Barry and Brown (1985) show that belief divergence is decreasing in the amount of information (commonly) available to analysts. The relative importance of private information will be higher when there is less public information, hence we will observe more divergence in opinion about the firm's future prospects. No matter whether investors are asymmetrically informed or have different perception of the same information set, differences in opinion can be captured by the fact that each investor's perception of the information at any time point is only a small part of the entire new information set about the firm[11]. In the light of gradual information diffusion theory, it will take much more

[10] Typically, differences of opinion are modeled through dogmatic beliefs or asymmetric information sets. Harris and Ravia (1993) explicitly model investors who were dogmatic about their beliefs.

[11] Kandel and Pearson (1995) provide empirical evidence of differential interpretation of public information by agents through examining the relation between volume of trade and stock returns around public

time for each investor to get a complete picture of the new information set when there is higher dispersion in forecasts, and therefore there will be stronger momentum in such stocks with higher dispersion[12]. Generally speaking, greater forecast dispersion may suggest slower information diffusion among investors, and we hypothesize that the greater the dispersion, the more the momentum.

Using the stock data of 16 emerging markets over the period from 1990 to 2002, we expect to shed some light on whether momentum strategies continue to work in the emerging markets, in response to the possible criticism that the observed momentum in the emerging markets arises due to data mining. Six strategies have been adopted in this paper to examine momentum in emerging markets at the individual stock level. We form momentum portfolios by closely following Jegadeesh and Titman (1993), and we also construct size-momentum portfolios, residual coverage-momentum portfolios, coverage change-momentum portfolios, dispersion-momentum portfolios, and the three-way sorted coverage-change-momentum, and coverage-dispersion-momentum portfolios. This paper makes some important constructions to the body of momentum knowledge. Firstly, we find that momentum strategies continue to be profitable in emerging markets, which validates the findings of Rouwenhorst (1999). Secondly, the test results qualitatively support the gradual information diffusion theory (Hong and Stein, 1999) at the individual stock level. To our special interest, we find that momentum strategies are most profitable in firms with increasing analyst coverage and firms with great forecast dispersion.

---

announcements. They also develop a differential interpretation model and test the "standard model of belief revision underlying most of trade using stock brokerage research analysts' earnings forecast".

[12] Andreas Dische (2002) argues that "the models of Daniel et al, 1998 and Hong and Stein, 1999 imply that misevaluations should be strongest in firms with information asymmetries…According to the two models, momentum should be strongest in firms with a high dispersion".

The remainder of this paper is organized as follows. Section 2 introduces sample and data. Section 3 provides the results on seven country-neutral momentum strategies at individual stock level: momentum only; size and momentum; coverage/coverage change and momentum; forecast dispersion and momentum; coverage-coverage change-momentum, coverage-dispersion-momentum. In section 4 we conduct a more tightly structured test on the relation between size/coverage/change/dispersion and return autocorrelation. Section 5 concludes the paper.

2. Sample and Descriptive Statistics

Our data comes from two primary sources. The stock returns are computed and size data collected from EMDB monthly data. The analyst coverage, change in analyst coverage and forecast dispersion are calculated using IBES Detailed Historical Files. Our sample includes the merged data of EMDB and IBES, and keeps all the stocks listed on each of the emerging markets in EMDB. Given that the number of firms listed on the emerging markets is quite small in their earlier years, we set our sample period from 1990 to 2002. Furthermore, all those countries with very small number of firms covered by analyst during the said period are excluded from our sample. Finally we get 16 countries each with at least 90 firms in total, and with at least 45 firms covered by analysts, selected out of the 35 emerging markets in EMDB. In light of the high volatility of emerging markets and absence of an independent data source, it is difficult to reliably identify the measurement error in the emerging markets. To control for effect of outliers, we exclude the observations with extreme data in each country. In particular, the returns at the 1% tails in the distribution of all monthly returns in any given year are excluded. All the

reported results at firm level in this paper are based on the 143,983 firm-month observations that are finally included in our sample.

Table 1 provides an overview of the sample periods that are used in our analysis. Among the 16 emerging markets, eleven of them (Korea, India, Malaysia, Taiwan, Thailand, Greece, Turkey, Philippine, Pakistan, Chile, and Sri Lanka) have 151 months' data from 199001 to 200207; three (China, South Africa, and Sri Lanka) have 104 months' data from 199312 to 200207; Indonesia and Portugal have 140 and 111 months' data respectively.

Insert Table 1 here.

Panel A of Table 2 presents total number of observations and mean value of variables at firm level in each country. The number of firm-month observations varies across countries, from a high of 19,050 in Korea to a low of 2,974 in Portugal. Also, there is a large variation in the mean return or size among countries, for instance, the mean monthly return (in USD) in Turkey is 1.5%, and in contrast to this, it is only -0.7% in Sri Lanka[13]. Across all the 16 countries, the mean monthly return is 0.2 percent (in USD), and the mean monthly market capitalization is 701.838 USD. For analyst coverage, it ranges from 4.033 per firm in Turkey to 0.478 per firm in Pakistan[14]. On an average, 1.584 analysts follow each firm in our whole stock sample with forecast dispersion of 0.32.

Insert Table 2 here.

[13] Size is the monthly market capitalization

[14] At each month t, we measured the analyst coverage for firm i, i.e., $Cov_{i,t}$ as the number of analysts who provide fiscal-year-1-ahead earnings estimation for this particular firm during the past 6 months from month t-6 to t-1. If the EMDB data is not matched with IBES data, we set its coverage to be zero.
We also conduct various tests using data of analyst following at firm level in past 12 months and obtain similar results (results not reported here).

Panel A and B of Table 3 report the number of firms in each coverage group by country and year respectively[15]. As shown in Table 3, the percentage of covered firms varies from 27.95% to 67.91% across the countries[16]. In particular, 67.91% of the firms in Turkey are covered by analysts, followed by 63.91% of the firms in Sri Lanka, 58.46% of the firms in Chile, and so on. China has the lowest percentage of covered firms, 27.95%. Meanwhile, the number of firms increases with the year from 1990 to 1998, and then decreases from 1999 to 2002[17]. Interestingly, the percentage of covered firms exhibits an inverted U shape during the sample period from 1990 to 2002. It is not surprising to observe that there are quite a lot of firms not covered by analysts, with less than 50% of the firms covered in the entire sample.

Insert Table 3 here.

In Table 4, Panel A and B report the number of analysts at firm level in each coverage group by country and year respectively. Among the covered firms in each country, the average number of analysts following ranges from 1.991 in Sri Lanka to 8.132 in Malaysia. Apparently both the mean number of analyst following each coverage-group (low, med, or high) and the average number of analysts are increasing with time.

Insert Table 4 here.

As we can see from the descriptive statistics of coverage groups in Table 5, high analyst coverage group has a considerably larger size compared to the low analyst coverage group. Analysts are more likely to follow bigger firms, as the information acquisition cost and risk in making errors associated with forecasting with data from smaller firms will be

[15] At the beginning of each month t, stocks are grouped into 4 coverage groups based their past-6-month analyst following. See more detail in Section 3

[16] The percentage of covered firms equals to (number of covered firms/total number of firms)*100.

[17] It may be due to that some firms suffered in the Asian Financial Crisis in 1998 and were delisted from the market eventually.

relatively higher. Our study shows strong evidence supporting this. The size of low coverage group is 395.578, which is much less than half the size of high coverage group (1, 091.787). Indeed, as shown in Table 5, there is a positive relationship between firm size (sizeus) and analyst coverage (cov), which is consistent with the findings of Bhushan (1989).

Insert Table 5 here.

3. Momentum Strategies at Firm Level

In this paper, we examine the gradual information diffusion theory in each of the 16 countries as well as the entire sample of 16 countries, using size and analyst behavior (the static coverage, change in coverage and forecast dispersion) as proxies for the rate of information diffusion.

We employ all the seven trading strategies within each of the 16 countries[18]. To get an overview of the momentum and gradual information diffusion story in our entire sample of 16 emerging markets, while controlling the country effects, we conduct the country-neutral strategy to deliver all the trading strategies[19]. Country-neutral portfolios are formed by ranking stocks into different groups based on past performance or past analyst behavior relative only to stocks from the same local market. For example, one third of stocks from each country with the lowest past-6-month cumulative return *R(i,t-6,t-1)* are assigned to the loser portfolio, and the top one third to the winner portfolio.

[18] They are momentum only, size and momentum, coverage and momentum, change and momentum, dispersion and momentum, coverage-change-momentum and coverage-dispersion-momentum strategies. See more details in Section 3.

[19] There are large country-specific factors in international stock returns. (see Heston and Rouwenhorst, 1994, 1995 and Griffin and Karolyi, 1998) And Rouwenhorst (1998) argues that international momentum portfolios will be poorly diversified due to the country-specific shocks. Taking this into consideration, we do everything by adopting the country-neutral strategy.

Within each country, we adopt the 6-6 overlapping strategy to form our momentum portfolios. In particular, by closely following Jegadeesh and Titman (1993), at the beginning of each month t, we rank stocks based on their formation period (from month t-6 to t-1) cumulative return *R(i,t-6,t-1)* (here i represents for individual stock). Stocks with *R(i,t-6,t-1)* at the bottom (middle or top) 1/3 among all the *R(i,t-6,t-1)*s at any given month t are sorted into loser (medium, winner) portfolio. We also construct a relative strength portfolio (winner-loser) through buying winners, and selling losers at each month t. All the momentum portfolios are held for another six months (from month t to t+5). Finally we compute the mean of holding period (from month t to t+5) cumulative return *R(i,t,t+5)* for each of the four momentum portfolios.

Panel A and B of Table 6 report the mean holding-period (from t to t+5) cumulative return *R(i,t,t+5)* in local currency and USD to momentum portfolios for 16 individual countries as well as for the country-neutral strategy. Generally, our results show evidence of positive autocorrelations in stock return at the medium horizon (6 months): there is momentum profit across 16 emerging markets, with a significant holding-period-cumulative return in USD of 3.4 percent (t-value=9.916) on an average, validating the findings of Rouwenhorst (1999).

We also find that the size of winners is significantly larger than that of losers during formation period (see Panel C of Table 6), and it is also true during the holding period. Therefore, we argue that momentum observed in the emerging markets may not arise from size effect, and this fact is further confirmed by our regression test. Moreover, the difference in return between medium and loser (2.1 percent) is about 50% higher than that between winner and medium (1.3 percent). In other words, the momentum profit

mainly comes from the loser, indicating that information diffusion rates for losers are even slower than that for winners.

We also adopt the 6-6 momentum strategy by skipping one month between formation period and holding period. The result is similar to that of the above strategy (not reported in this paper but is available upon request).

Insert Table 6 here.

3.1 Size and Momentum

As indicated by the gradual information diffusion theory by Hong and Stein (1999), there should be more momentum in small firms. The scenario could be like this: there is less public information about small firms, and more uncertainty in the performance of small firms, which results in more heterogeneity among investors in their expectation formation about the small firms' future earnings ability. Consequently it is slower for the information of small firms to be fully disseminated among investors, and incorporated into the stock price, which leads to momentum.

We construct size-momentum portfolios as follows: Similar to the formation of momentum portfolios, at the beginning of each month t, we rank stocks based on their $Size_{i,t}$, which is the average monthly market capitalization of firm i in past 6 months from t-6 to t-1. Stocks with $Size_{i,t}$ at the bottom (middle, top) 1/3 among all the $Size_{i,t}$s at any given month t are assigned into small (medium, big) size group. In addition, we form momentum portfolios within each size group, so called size-momentum portfolio. For illustration, within the small size group, at the beginning of each month t, we rank stocks based on their formation period cumulative return *R(i,t-6,t-1)*. Stocks with *R(i,t-6,t-1)* at the bottom (middle, top) 1/3 among all the *R(i,t-6,t-1)*s at any given month t will be

sorted into the small-loser (small-medium, small-winner) portfolio. Then we will get 9 size-momentum portfolios, and all of them will be held for another 6 months from month t to t+5. Finally we calculate the mean of holding period cumulative return *R(i,t,t+5)* to each of the 12 size-momentum portfolio.

Table 7 reports the results for country-neutral momentum strategies cut by size: mean and t values of the holding period return in USD to momentum portfolios across three size groups. We find that momentum works well in 12 individual countries in the small size group, and it works in only 6 (7) countries in the middle (big) size group. However, the country-neutral momentum strategy is profitable in each of the size groups. Returns to the relative strength portfolio for small, medium and big size group are significant with t-values of 8.062, 2.958 and 7.036 respectively. Interestingly, we find that the momentum profit decreases from 4.3 percent for small firms to 3.1 percent for big firms, and the difference in momentum profit between small and big firms is significant at 1% significance level with t-value of 2.68. Our results are consistent with the implication of the gradual information diffusion theory, that is, the slower the information diffusion, the higher the momentum profit will be.

Insert Table 7 here.

3.2 Analyst Coverage and Momentum

Although firm size may be a useful proxy for the rate of information diffusion, it may also capture the effect of other confounding factors such as arbitrage capacity. The alternative proxy could be residual analyst coverage, i.e. residual derived from the regression of analyst coverage on market capitalization (see Hong et al., 2000). The basic idea is that firm-specific information of firms with low analyst coverage will move more

slowly across the investors. However, Bhushan (1989) documents that analyst coverage is very strongly correlated with firm size. Analyst may have little incentive to track smaller firms in an attempt to protect their compensation, given that the information acquisition cost and transaction cost associated with smaller firms are relatively higher than those associated with bigger firms. As there is greater uncertainty about the future earnings of smaller firms, and the analyst faces higher risk in making forecast errors, hence fewer analysts would follow the smaller firms. Alternatively, the demand for information of larger firms may be higher than that of smaller firms, thereby more analysts tend to follow larger firms.

To control the influence of size on analyst coverage in our test of gradual information diffusion theory, we sort stocks into coverage groups based on their residual analyst coverage $RCov_{i,t}$. Here we denote $RCov_{i,t}$ as the residual from a cross-sectional regression of the logarithm of (1+analyst coverage $Cov_{i,t}$) on the logarithm of current market capitalization in month t[20]. Logarithm values are used in the model because "it seems plausible that one extra analyst should matter much more in this regard if a firm has few analysts than if it has many". (Hong, et al, 2000) At the beginning of each month t, stocks with zero analyst following in past 6 months are sorted into zero coverage group[21]. Among the non-zero $Cov_{i,t}$ stocks, stocks with residual analyst coverage ($RCov_{i,t}$) at the bottom (middle, top) 1/3 are assigned into low (medium, high) coverage

[20] This is also the baseline method used by Hong, Lim, and Stein (2000), since they find that firm size is the dominant factor to affect analyst coverage among a series of variables such as turnover, book-to-market, industry-dummy and so on.

[21] One thing worth noting is that for those firms with zero $Cov_{i,t}$, it is possible that IBES Detailed Historical Files have missing information on their analyst, or IBES has the data but assigns them to a different company name. In our test on coverage and momentum, we treat zero coverage portfolio as a special case, and exclude it form our testing sample.

group. Furthermore, we form momentum portfolios within each coverage group (so called coverage-momentum portfolios), similar to the construction of momentum portfolios within each size group[22]. All the 9 coverage momentum portfolios are held for another 6 months.

Table 8 reports the results of coverage-momentum strategies for 16 individual countries and the results for country-neutral strategy: mean and t value of holding period return to the momentum portfolios across all the non-zero coverage groups. As shown in the table, there is significant positive momentum profit in each coverage group of the whole sample (including 16 markets' data). Returns to the relative strength portfolio in low, medium, and high coverage groups are significant with t-values of 3.908, 3.997 and 4.416 respectively. It is interesting to observe that the momentum profit shrinks as we go from low coverage to high coverage: it decreases monotonically from 3.9 percent in low coverage to 3.5 percent in high coverage. We get more convincing results using the past-12-month analyst following data, as the momentum profit decreases monotonically from 4.3 percent in low coverage to 2.6 percent in high coverage (not shown in table). The evidence of the influence of residual coverage on momentum profit supports the gradual information diffusion theory by Hong and Stein (1999).

Insert Table 8 here.

3.3 Change in Analyst Coverage and Momentum

Empirical studies show that analysts are more likely to start following firms when they are optimistic about the firms' short term prospects (McNichols and O'Brien, 1997) and

[22] For illustration, within the low coverage group, at the beginning of each month t, we rank stocks based on their past-6-month cumulative return *R(i,t-6,t-1)*. Stocks with *R(i,t-6,t-1)* at the bottom (middle, top) 1/3 will be assigned into the low-loser (low-medium, low-winner) portfolio. Also, we construct the relative strength portfolio within each coverage group, buying winner and selling loser (winner-loser).

stock price drifts in response to analyst recommendations (Womack, 1996) indicating that changes in analyst coverage can be linked to future returns. Analysts are more likely to initialize their following when they have private information about the firm. They may quit following when private information about the firm is no longer available, decreasing (increasing) analyst coverage attached to the firm indicating that there are fewer (more) pieces of private information about the firm. In the context of gradual information diffusion theory, the whole information set will diffuse faster (more slowly) among investors, which leads to less (more) momentum. Therefore, changes in analyst coverage may be another potential proxy for the rate of information diffusion.

We denote $Change_{i,t}$ as the change in analyst coverage during the formation period from month t-6 to t-1 for firm i. This is measured as the difference between $Cov_{i,t}$ and six month lagged $Cov_{i,t-6}$.

Similar to the construction of coverage portfolios, we form change portfolios as below: at the beginning of each month t, we exclude all those observations with both zero $Cov_{i,t}$ and zero $Change_{i,t}$. Among the rest of the observations, we rank stocks based on their $Change_{i,t}$. If the stock's $Change_{i,t}$ is negative (zero, positive) in any given month t, the stock is assigned to decrease (same, increase) change portfolio. In addition, we form momentum portfolios within each change portfolio (so called change-momentum portfolios)[23]. All of the 9 change momentum portfolios are held for another 6 months. We

[23] For illustration, within the negative change group, at the beginning of each month t, we rank stocks based on their past-6-month cumulative return, *R(i,t-6,t-1)*. Stocks with *R(i,t-6,t-1)* at the bottom (middle, top) 1/3 will be assigned into the decrease-loser (decrease-medium, decrease-winner) portfolio. Also, we construct the relative strength portfolio within each change group, buying winner and selling loser (winner-loser).

conduct this test to examine whether momentum strategy is more profitable in firms with increasing analyst coverage, as we hypothesized before.

Table 9 reports the results of change-momentum strategies for 16 individual countries and the results for country-neutral strategy: mean and t value of holding period return to the momentum portfolios across the three change groups. Momentum strategy applied to the whole sample of 16 markets' data is profitable in each of the three change groups. Returns to the relative strength portfolio in decreasing, same, and increasing coverage groups are on average significant with t-values of 3.824, 4.619 and 6.223 respectively. As expected, there is more likelihood for momentum profits to exist in increasing group than in decreasing group, for instance, 15 countries in increasing group have positive momentum profits whereas in decreasing group only 12 countries have it. Moreover, the country-neutral momentum profit shrinks monotonically from 5.1 percent for increasing coverage group to 4.7 percent for same coverage group and then to 3.3 percent for decrease coverage group. The evidence that momentum strategy works particularly well in increasing coverage group supports the gradual information diffusion theory, at the same time it verifies our former argument that changes in analyst following could be a useful proxy for the rate of information diffusion.

Insert Table 9 here.

3.4 Earnings Forecast Dispersion and Momentum

Intuitively, the greater the dispersion of forecasts, the more heterogeneous is the opinion about the earnings ability of the firm among investors. This heterogeneity may be due to each investor's perception of the information which is only a trivial part of the whole information set. It will take a lot of time for each investor to get a complete picture of the

information when there is large dispersion in opinion. This implies that greater forecast dispersion may suggest slower information diffusion among investors, and this will lead to more momentum, which supports Hong and Stein's (1999) theory.

To obtain the value of forecast dispersion, first we filter out the latest estimation made by every analyst for firm i in each month t. We denote the forecast dispersion at month t $Disp_{i,t}$ as the absolute value of standard deviation of the estimations (made during the period from t-6 to t-1) scaled by the mean estimation[24]. Similar to the construction of coverage portfolios, we form three dispersion portfolios: small, medium, and large[25]. Furthermore, we form momentum portfolios within each dispersion portfolio[26]. All of the 9 dispersion-momentum portfolios are held for another 6 months. By taking this dispersion-momentum strategy, we expect to find that the larger dispersion, the more the momentum.

Table 10 reports the mean and t-value of holding period returns to momentum portfolios across the three dispersion groups for 16 individual countries and for country-neutral strategy. Momentum strategy applied to the entire sample of 16 markets is profitable in each of three dispersion groups. The positive returns to the relative strength portfolio in small, medium and large dispersion groups are significant with t-values of 2.891, 2.490

[24] $Disp_{i,t} = \left| \frac{Std\_estimation_{i,t}}{Mean\_estimation_{i,t}} \right|$ The method here is consistent with that by

[25] At the beginning of each month t, we exclude observations with zero past-6-month analysts following ($Cov_{i,t}$). Among the non-zero $Cov_{i,t}$ stocks, we rank stocks based on $Disp_{i,t}$, the dispersion of forecasts during the formation period from t-6 to t. If the stock's $Disp_{i,t}$ is at the bottom (middle, top) 1/3, the stock is assigned into small (med, large) dispersion portfolio.

[26] For illustration, within the small dispersion group, at the beginning of each month t, we rank stocks based on their past-6-month cumulative return—*R(i,t-6,t-1)*. Stocks with *R(i,t-6,t-1)* at the bottom (middle, top) 1/3 will be assigned into the small-loser (small-medium, small-winner) portfolio. Also, we construct the relative strength portfolio within each dispersion group, buying winner and selling loser (winner-loser).

and 6.442 respectively. Moreover, magnitudes of momentum profits are consistent with our hypothesis that the greater the dispersion, the more the momentum: 5.6 percent return on average for large dispersion group compared with 2.8 percent for small dispersion group, in addition, 8 countries earned significant momentum profit in large dispersion group compared with 4 countries in small dispersion group. The differences in momentum profit for large vs. small and large vs. medium are both significant at 5% significance level. The evidence that momentum strategy works particularly well in large dispersion group supports the gradual information diffusion theory. At the same time it also verifies our former argument that dispersion in analyst following can act as the proxy for rate of information diffusion.

Insert Table 10 here.

3.5 Analyst Coverage, Change in Analyst Coverage and Momentum

To further examine the relation between analyst behaviors and return continuation, we form three-way sorted portfolios by ranking the stocks based on analyst coverage, changes in analyst coverage and past cumulative return simultaneously[27]. This is done in addition to the two-way sorted coverage-momentum and change-momentum strategies. At the beginning of each month t, we first sort stocks into three coverage groups based on their residual analyst coverage($RCov_{i,t}$), top 1/3 is high coverage, bottom 1/3 is low coverage, and the middle 1/3 is medium coverage; within each coverage group, we further sort stocks into three change groups based on the changes in past-6-month analyst following—decreasing, same and increasing coverage groups; finally, within each coverage-change group, we form momentum portfolios based on their past-6-month

[27] We exclude observations with both zero analyst coverage and zero change in coverage.

cumulative return, top 1/3 is winner, bottom 1/3 is loser, and middle 1/3 is medium. Also, we construct the relative strength portfolio within each coverage-change group. In total, we form 27 coverage-change-momentum portfolios at each month t and hold the portfolios for another 6 months.

Table 11 reports the mean and t-value of the holding period return to momentum portfolios across 9 coverage-change groups for 16 individual countries and for country-neutral strategy. As for the momentum strategy applied to the entire sample of 16 markets, 7 coverage-change groups earn momentum profits, of which 4 are significant at the conventional 5% significance level. Meanwhile, we find more evidence for the gradual information diffusion theory. Specifically, among the 4 significant momentum profits to coverage-change groups, the momentum profits decrease with analyst coverage: from 8.2 percent return in low-increase group to 7.4 percent in medium-increase group, and then to 3.6 percent in high-increase group. Furthermore, by controlling for the effect of analyst following, momentum strategy exercised in the firms with increasing coverage outperforms that in the firms with decreasing coverage. For instance, 7.4 percent momentum profit in medium coverage-increasing coverage group is much higher than -1.8 percent in medium coverage-decreasing coverage group.

Insert Table 11 here.

3.6 Analyst Coverage, Earnings Forecast Dispersion and Momentum

Now we do another contemporaneous ranking to form our coverage-dispersion-momentum portfolios. At the beginning of each month t, we first sort stocks into three

coverage groups based on their residual analyst coverage ($RCov_{i,t}$)[28]. Within each coverage group, we further sort stocks into three dispersion groups based on past-6-month forecast dispersion—small, middle and large dispersion groups, and finally, within each coverage-dispersion group, we form momentum portfolios based on their past-6-month cumulative return[29]. We also construct the relative strength portfolio within each coverage-dispersion group by buying winners and shorting losers. In total, 27 coverage-dispersion-momentum portfolios are formed at each month t and held for another 6 months.

As seen from Table 12, coverage effect seems to dominate dispersion effect. The momentum profits in low coverage groups are generally higher than in the other two overage groups (med and high). Moreover, within each coverage group, dispersion effect disappears except for in the med-coverage group. However, we should note that among the 9 coverage-dispersion groups, only 3 country-neutral momentum strategies are significantly profitable: they are low-small, low-middle and med-large groups. In general, gradual information diffusion theory is only partially supported here.

Insert Table 12 here.

4. Regression Approach

In this section we take a more tightly structured approach to test the relation between size/analyst behavior and momentum. As we all know, momentum is kind of return continuation, that is, positive auto-correlation in medium-term returns. Given the assumption that the gradual information diffusion theory is true, Hong, Lim and Stein

[28] Stock with top 1/3 $RCov_{i,t}$ is high coverage, bottom 1/3 is low coverage, and the middle 1/3 is medium coverage.

[29] Stock with top 1/3 R(i, t-6, t-1) is winner, bottom 1/3 is loser, and middle 1/3 is medium.

(2000) hypothesized that "stocks that are small and that have low residual analyst coverage should display more positively auto-correlated returns at medium horizons". Now we extend their hypothesis to be that stocks that are small and that have low residual analyst coverage, positive changes in analyst coverage and high forecast dispersion should display more positively autocorrelations at medium horizons.

Following the spirit of regression approach by Hong, Lim, and Stein (2000), every month, we run Fama-Macbeth regression where serial correlation of 6-month returns is regressed on size, analyst coverage, change in analyst coverage and dispersion of forecasts respectively.

Model 1: SCORR = SIZE

Model 2: SCORR =COV;

Model 3: SCORR =CHANGE;

Model 4: SCORR =DISP;

Precisely, at each month t, we get SCORR for each stock (county index) by computing the serial correlation of 6-month return using return data from month t to t+36[30]. In particular, the serial correlation of 6-month return at month t is calculated by running regression of return (t-12, t-7) on return (t-6, t-1); SIZE is log(market capitalization at month t-6); COV is the log(1+6_month analyst coverage at month t-6). Specifically, 6_month analyst coverage at month t-6 is the number of analyst following from month t-12 to t-7. CHANGE is the change in 6_month analyst coverage calculated at month t-6, i.e., difference between the number of analyst following from month t-12 to t-7 and the

[30] What Hong, Lim and Stein (2000) use is future 5 years' data, i.e. from t to t+60. However, since our sample period is relatively short, from 1989 to 2002, to get as more observations as possible while guarantee the reliability of the data in our regression tests, I calculate the serial correlation of 6-month returns using future 3 years' data form month t to t+36.

number of analyst following from month t-18 to t-13. In addition to calculating the Fama-MacBeth (1973) time-series average of coefficients, we also run the pooled regression with year dummy. We expect to find negative coefficients on SIZE and COV, and positive coefficients on CHANGE and DISP.

In line with our former tests on momentum and analyst behavior as well as size, Table 13 shows that there are negative coefficients on SIZE and COV, and positive coefficients on CHANGE and DISP in the majority of our 16 emerging markets. To our interest, when we apply the same methods to the entire sample of 16 markets' data, we find that the overall Fama-Macbeth average of coefficients on SIZE and COV are significantly negative with estimations of -0.01 and -0.011 respectively[31]. Meanwhile, CHANGE and DISP are consistently positively related with the serial correlation of stock returns through the years, except in a few years such as 1990 and 1995. The results of pooled regression by year dummy further confirm our hypothesis about coefficients on SIZE and CHANGE, which are significantly negative and positive with t-value of -4.031 and 6.86 respectively. To our surprise, the effect of COV on momentum is mixed, with the Fama-Macbeth average coefficient being negative and Pooled Regression coefficient being positive. This result may be due to the fact that in the regressions we used the logarithm of raw coverage, instead of residual coverage and raw coverage may cover other effects other than rate of information diffusion[32].

Insert Table 13 here.

5. Conclusion

[31] The methods used here are Fama-Macbeth regression and pooled regression with year dummy.

[32] Such as self-selection effect, (see McNichols and O'Brien ,1997). According to self-selection theory, there will be stronger continuation of returns in winners which are more likely to be followed by analysts. However, Hong, Lim, and Stein (2000) find that bad news transfer more slowly, which indicate that momentum profits mainly come from losers instead of winners.

This paper provides complementary evidence of the profitability of momentum strategies in the literature by implementing different momentum strategies using data from EMDB and IBES. Our findings are consistent with the results of Rouwenhorst (1999), indicating that momentum effects in emerging markets are not due to data snooping.

Using size, analyst coverage, changes in analyst coverage and forecast dispersion as proxies for the rate of information diffusion, we conduct tests of the gradual information diffusion theory proposed by Hong and Stein (1999). The test results support the gradual information diffusion theory at the firm level. Specifically, we find that momentum strategies are most profitable in small firms, firms with low analyst coverage, firms with increasing coverage and firms with high forecast dispersion. Our more tightly structured regression test results also partially support our hypotheses. An important finding of this research is that change in analyst coverage and analyst forecast dispersion may indicate the information available to the market, and can be good proxies for the rate of information diffusion.

References

Bailey, Li, Mao and Zhong, 2003, Regulation Fair Disclosure and Earnings Information: Market, Analyst, and Corporate Responses, Journal of Finance, VOL. IVIII, No.6

Barberis, Nicholas, Andrei Shleifer, and Robert Vishny, 1998, A Model of Investor Sentiment, Journal of Financial Economics 49, 307-343

Barry, C. B. and S. J. Brown, 1984, Differential Information and the Small Firm Effect, Journal of Financial Economics, 13, 283-294

Barry, C.B. and S.J. Brown, 1985, Differential Information and Security Market Equilibrium, Journal of Financial and Quantitative Analysis, 20, Dec. 1985, 407-422

Bekaert, Geert, Campbell R. Harvey, 1995, Time-Varying World Market Integration, The Journal of Finance, Vol. 50, No. 2. 403-444

Boni, Leslie, Kent L. Womack, 2003, Industries, Analysts, and Price Momentum, working paper, University of New Mexico

Chan, Kalok, Allaudeen Hameed and Wilson H.S. Tong, 2000, Profitability of Momentum Strategies in the International Equity Markets, Journal of Financial and Quantitative Analysis, Vol. 35, No. 2

Chordia, Tarun, and Lakshmanan Shivakumar, 2002, Momentum, Business Cycle, and Time-varying Expected Returns, Journal of Finance, Vol. 57 Issue 2

Chui, Andy C. W., Sheridan Titman, and K. C. John Wei, 2000, Momentum, Legal Systems and Ownership Structure: An Analysis of Asian Stock Markets, working paper, University of Texas

Conrad, Jennifer, and Gautam Kaul, 1998, An Anatomy of Trading Strategies, Review of Financial Studies 11, 489-519

Daniel, Kent; David Hirshleifer; Avanidhar Subrahmanyam, 1998, Investor Psychology and Security Market Under- and Overreactions, The Journal of Finance, Vol. 53, No. 6. 1839-1885

De Bondt and Thaler, 1985, Does the Stock Market Overreact? The Journal of Finance, VOL XL, No. 3

Diether, Karl, Christopher Malloy, and Anna Scherbina, 2002, Differences of Opinion and the Cross Section of Stock Returns, The Journal of Finance, VOL. LVII, NO.5

Dische, Andreas, 2002, Dispersion in Analyst Forecasts and the Profitability of Earnings Momentum Strategies, European Financial Management, Vol. 8, No. 2

Doukas, John and Phillip McKnight, 2003, European Momentum Strategies, Information Diffusion, and Investor Conservatism, working paper, Old Dominion University

Fama, Eugene F., and James Macbeth, 1973, Risk, Return and Equilibrium: Empirical Tests, Journal of Political Economy 81, 607–36

Fama, Eugene and Kenneth French, 1996, Multifactor Explanations of Asset Pricing Anomalies, The Journal of Finance 51, 55-84

Griffin, Ji, and Martin, 2003, Momentum Investing and Business Cycle Risk: Evidence from Pole to Pole, Journal of Finance, VOL. LVIII, No.6

Griffin, John M., and Andrew Karolyi, Another look at the Role of the Industrial Structure of Markets for International Diversification Strategies, 1998, Journal of Financial Economics 50, 351-373.

Grundy, Bruce, and Spencer Martin, 2000, Momentum: Fact or Factor? Momentum Investing when Returns Have a Factor Structure, Review of Financial Studies, 64(1), 29-78

Hameed, Allaudeen and Kalok Chan, 2003, Stock Price Synchronicity and Analyst Coverage in Emerging Markets, working paper, National University of Singapore

Heston, S. and G. Rouwenhorst, 1994, Does Industrial Structure Explain the Benefits of International Diversification? Journal of Financial Economics, Vol. 36, 3-27

Heston, S. and G. Rouwenhorst, 1995, Industry and Country Effects in International Stock Returns, Journal of Portfolio Management, Vol. 21, 53-58

Hong, Harrison and Jeremy Stein, 1999, A Unified Theory of Underreaction, Momentum Trading, and Overreaction in Asset Markets, The Journal of Finance, VOL. LIV, NO.6

Hong, Harrison, Terence Lim, and Jeremy Stein, 2000, Bad News Travels Slowly: Size, Analyst Coverage, and the Profitability of Momentum Strategies, The Journal of Finance, VOL. LV, No.1

Jegadeesh, Narasimhan and Sheridan Titman, 1993, Returns to Buying Winners and Selling Losers: Implications for Stock Market Efficiency, Journal of Finance 48, 65-91

Jegadeesh, Narasimhan and Sheridan Titman, 2001, Profitability of Momentum Strategies: An Evaluation of Alternative Explanations, The Journal of Finance, VOL. LVI, No.2

Kandel, Eugene and Pearson, Neil D., 1995, Differential Interpretation of Public Signals and Trade in Speculative Markets, Journal of Political Economy, VOL. 103, NO.4

Lakonishok, Josef, Andrei Shleifer, and Robert Vishny, 1994, Contrarian Investment, Extrapolation and Risk, Journal of Finance 49, 1541-1578

Lee, Charles M.C. and Bhaskaran Swaminthan, 2000, Price Momentum and Trading Volume, Journal of Finance, Vol. 55 Issue 5

Maureen McNichols and Patricia C. O'Brien, 1997, Self-selection and Analyst Coverage, Journal of Accounting Research, Supplement 1997, 167-199

Moskowitz, Tobias J., and Mark Grinblatt, 1999, Do Industries Explain Momentum? Journal of Finance 54, 1249–90.

Rouwenhorst, Geert, 1998, International Momentum Strategies, The Journal of Finance, VOL. LIII, No.1

Rouwenhorst, Geert, 1999, Local Return Factors and Turnover in Emerging Markets, The Journal of Finance, VOL. LIV, NO.4

Slezak, Steve L., 2003, On the Impossibility of Weak Form Efficient Markets, Journal of Financial and Quantitative Analysis, VOL. 38, NO.3

Womack, Kent L., 1996, Do Brokerage Analysts' Recommendations Have Investment Value? Journal of Finance 51, 137-168

Table 1

Sample Period

This table presents the sample period by country. nmth is the total number of months in the sample period for each country. begin (end) is the beginning (ending) month in the sample period for each country

country	nmth	begin	end
Korea	151	199001	200207
India	151	199001	200207
Malaysia	151	199001	200207
Taiwan	151	199001	200207
China	104	199312	200207
Indonesia	140	199012	200207
South Africa	104	199312	200207
Thailand	151	199001	200207
Greece	151	199001	200207
Turkey	151	199001	200207
Philippine	151	199001	200207
Pakistan	151	199001	200207
Chile	151	199001	200207
Sri Lanka	104	199312	200207
Argentina	151	199001	200207
Portugal	111	199001	199903

Table 2

Summary Statistics of Variables by Country

This table reports the mean value of variables by country. nobs is the number of observations; sizeus/rtnus(rtn) is the monthly market capitalization/return in USD(local currency); cov is the past-6-month analyst following; disp is the standard deviation of past 6 months' forecasts over the absolute mean forecast.

Country	nobs	rtn	rtnus	cov	sizeus	disp
Korea	19050	0.001	0.002	1.635	784.436	0.421
India	15518	0.005	-0.001	1.419	533.764	0.129
Malaysia	14770	0.002	0.001	1.903	871.221	0.165
Taiwan	12551	-0.002	-0.003	0.605	1656.008	0.107
China	17244	0.013	0.013	0.634	619.040	0.037
Indonesia	6863	0.007	0.004	2.067	420.066	0.260
South Africa	6253	0.008	0.002	1.740	1839.475	0.530
Thailand	8211	-0.002	-0.004	1.614	688.177	2.182
Greece	6289	0.012	0.008	0.654	614.029	0.102
Turkey	5967	0.057	0.015	4.033	608.781	0.293
Philippine	6010	-0.001	-0.005	1.771	502.433	0.096
Pakistan	7776	0.007	0.001	0.478	89.266	0.071
Chile	6010	0.010	0.005	2.045	847.831	0.200
Sri Lanka	4333	-0.001	-0.007	0.819	26.516	0.084
Argentina	4164	0.029	0.006	2.448	609.881	0.230
Portugal	2974	0.004	0.003	1.482	518.483	0.218
whole sample	143983	0.010	0.002	1.584	701.838	0.320

Table 3

Number of Firms

This table presents the number of firms in each coverage group. At the beginning of each month t, we sort stocks into 4 coverage groups based on their past-6-month analyst following Cov or residual coverage (RCov), if its Cov=0, then it is grouped into zero portfolio; among non zero Cov ones, if its RCov is at the lowest (medium, highest) 1/3 then it is grouped into low (med, high) portfolio. total is the sum number of firms. % of coverage is the percent of firms covered by analysts.

Panel A: by country	zero	low	med	high	total	% of coverage
Korea	197	94	98	73	462	57.36
India	168	67	67	47	349	51.86
Malaysia	187	48	42	28	305	38.69
Taiwan	134	24	29	23	210	36.19
China	263	38	36	28	365	27.95
Indonesia	124	44	35	32	235	47.23
South Africa	75	31	32	27	165	54.55
Thailand	96	35	35	26	192	50.00
Greece	74	21	28	20	143	48.25
Turkey	60	42	44	41	187	67.91
Philippine	78	22	21	17	138	43.48
Pakistan	111	35	34	22	202	45.05
Chile	54	26	31	19	130	58.46
Sri Lanka	61	36	38	34	169	63.91
Argentina	43	19	17	17	96	55.21
Portugal	46	26	23	19	114	59.65
Panel B: by year	zero	low	med	high	total	% of coverage
1990	488	56	60	50	654	25.38
1991	542	74	86	69	771	29.70
1992	526	107	124	95	852	38.26
1993	700	192	238	173	1303	46.28
1994	788	226	288	211	1513	47.92
1995	884	252	295	216	1647	46.33
1996	891	224	266	206	1587	43.86
1997	948	239	278	194	1659	42.86
1998	1044	255	292	211	1802	42.06
1999	1011	225	265	198	1699	40.49
2000	1007	202	231	169	1609	37.41
2001	1058	201	228	163	1650	35.88
2002	926	85	95	92	1198	22.70

Table 4

Number of Analysts

This table presents the mean number of analyst following at firm level in nonzero coverage groups. At the beginning of each month t, we sort stocks/country indices into four coverage groups based on their past-6-month analyst following Cov or residual coverage (RCov), if its Cov=0, then the it is grouped into zero portfolio; among those non zero Cov ones, if its RCov is at the lowest (medium, highest) 1/3 then it is grouped into low (med, high) coverage group. average is the average Cov for the nonzero coverage groups.

Panel A: by Country	low	med	high	average
Korea	1.489	3.422	7.602	4.171
India	1.653	5.100	9.338	5.364
Malaysia	2.527	7.695	14.174	8.132
Taiwan	1.196	3.005	7.914	4.038
China	1.484	4.498	13.827	6.603
Indonesia	2.610	5.973	9.236	5.940
South Africa	3.003	5.301	7.413	5.239
Thailand	2.420	6.646	9.633	6.233
Greece	1.811	4.178	6.110	4.033
Turkey	4.958	7.183	9.597	7.246
Philippine	2.543	6.032	11.504	6.693
Pakistan	1.123	2.282	4.734	2.713
Chile	1.815	3.844	8.674	4.778
Sri Lanka	1.154	1.820	2.998	1.991
Argentina	3.570	7.633	9.655	6.952
Portugal	1.884	3.224	5.299	3.469
Panel B: by Year	low	med	high	average
1990	1.876	4.166	4.758	3.388
1991	1.663	4.445	5.958	3.130
1992	1.816	3.750	5.633	3.312
1993	1.644	2.666	4.361	2.890
1994	1.251	2.150	3.429	2.277
1995	2.170	4.159	6.304	4.211
1996	2.680	5.496	8.281	5.486
1997	2.856	5.849	9.717	6.141
1998	2.701	5.983	10.031	6.239
1999	2.407	6.177	11.926	6.836
2000	2.355	6.262	12.412	7.010
2001	2.149	6.143	12.569	6.954
2002	2.254	6.284	13.688	7.818

Table 5

Descriptive Statistics of Coverage Groups

This table reports the sample mean of variables for each coverage group. Specifically, Sizeus: monthly market capitalization in USD; Rtn(Rtnus): monthly return in local currency(in USD); Cov is the number of analysts who follows the stock in past 6 months; Disp is the dispersion of forecasts in past 6 months for the stock, i.e. the standard deviation of estimations in past 6 months scaled by absolute mean estimation; summary: mean value for the whole sample.

coverage	Sizeus	Rtn	Rtnus	Cov	Disp
low	395.578	0.009	0.002	2.201	0.668
med	617.721	0.009	0.001	4.924	1.712
high	1091.787	0.009	0.001	8.894	0.947
zero	763.875	0.009	0.005	0.000	.
summary	701.838	0.010	0.002	1.584	0.320

Table 6

Momentum

Panel A of this table reports the holding-period (from t to t+5) cumulative return in local currency to momentum portfolios (winner, medium, loser and winner-loser); Panel B reports the holding-period return in USD to momentum portfolios. Overall represents the country-neutral momentum strategy using the data of all the 16 markets.

To form momentum portfolios, at the beginning of each month t, we sort stocks into three groups based on their past-6-month (from t-6 to t-1) cumulative return R(i,t-6,t-1), if its R(i,t-6,t-1) is at the bottom (middle, top) 1/3, then the stock is sorted into loser (medium, winner) portfolio, and we construct the relative strength portfolio winner-loser by buying winners, and selling losers. All the momentum portfolios are held for another 6 months from t to t+5.

Panel A: Local Currency

country	winner		medium		loser		winner-loser	
	mean	t	mean	t	mean	t	mean	t
Korea	0.007	0.283	0.024	0.800	0.017	0.552	-0.010	-0.811
India	0.094	4.424	0.068	3.217	0.050	2.237	0.044	4.690
Malaysia	0.053	2.326	0.042	1.803	0.015	0.598	0.038	3.180
Taiwan	-0.006	-0.285	0.000	-0.015	0.002	0.092	-0.008	-0.749
China	0.089	3.808	0.065	2.810	0.045	1.882	0.044	2.987
Indonesia	0.041	1.457	0.019	0.667	0.041	1.219	0.000	0.009
South Africa	0.087	5.582	0.039	2.728	0.023	1.271	0.064	4.601
Thailand	0.044	1.784	0.015	0.623	-0.029	-1.107	0.072	5.421
Greece	0.134	3.744	0.117	3.252	0.096	2.866	0.038	2.519
Turkey	0.451	8.367	0.471	8.467	0.432	8.596	0.018	0.817
Philippine	0.009	0.481	0.024	1.147	-0.027	-1.276	0.037	2.727
Pakistan	0.070	3.451	0.063	2.973	0.050	2.323	0.021	2.787
Chile	0.125	6.688	0.106	5.791	0.076	4.349	0.049	5.157
Sri Lanka	0.039	1.684	0.017	0.698	-0.002	-0.091	0.042	4.460
Argentina	0.372	5.044	0.356	4.276	0.293	3.909	0.079	2.634
Portugal	0.082	4.315	0.038	2.263	-0.002	-0.111	0.084	7.306
overall	0.109	12.486	0.096	10.393	0.072	8.068	0.037	9.601

Panel B: USD

country	winner		medium		loser		winner-loser	
	mean	t	mean	t	mean	t	mean	t
Korea	-0.003	-0.097	0.015	0.455	0.010	0.275	-0.013	-0.965
India	0.049	2.425	0.024	1.192	0.008	0.389	0.040	4.517
Malaysia	0.049	2.040	0.040	1.580	0.013	0.487	0.036	2.994
Taiwan	-0.014	-0.654	-0.009	-0.397	-0.006	-0.245	-0.008	-0.712
China	0.093	3.935	0.068	2.951	0.049	2.027	0.044	2.936

Indonesia	0.018	0.497	-0.002	-0.061	0.028	0.633	-0.009	-0.549
South Africa	0.041	2.160	-0.004	-0.222	-0.018	-0.865	0.060	4.630
Thailand	0.035	1.292	0.008	0.304	-0.033	-1.140	0.068	5.141
Greece	0.099	2.869	0.081	2.349	0.061	1.883	0.038	2.652
Turkey	0.141	3.041	0.157	3.269	0.125	2.983	0.016	0.863
Philippine	-0.012	-0.554	0.002	0.102	-0.048	-2.002	0.035	2.621
Pakistan	0.031	1.466	0.023	1.070	0.010	0.472	0.020	2.872
Chile	0.087	4.785	0.068	3.837	0.039	2.295	0.048	5.279
Sri Lanka	0.002	0.086	-0.019	-0.769	-0.037	-1.459	0.039	4.349
Argentina	0.096	2.643	0.064	1.635	0.029	0.783	0.067	3.444
Portugal	0.073	4.407	0.030	2.033	-0.010	-0.631	0.083	7.165
overall	0.049	6.847	0.036	4.820	0.015	2.018	0.034	9.916

Panel C and Panel D report the characteristics of momentum portfolios before and after portfolio formation respectively. Return column presents the 6-month return (in local currency and USD) before/after portfolio formation; Sizeus column presents the average monthly market capitalization in USD over 6 months before/after portfolio formation; Cov column presents the past-6-month analyst following in portfolio formation month t (see Panel C) and that in month t+6 (see Panel D); Disp column presents the past-6-month forecast dispersion (=|std/mean|) in portfolio formation month t (see Panel C) and that in month t+6 (see Panel D); Change column presents the changes in Cov during 6 months before/after portfolio formation.

Panel C

portfolio	Return		Sizeus	Cov	Disp	Change
	lc	usd				
loser	-0.148	-0.229	532.539	1.335	0.247	0.054
medium	0.140	0.002	695.465	1.448	0.201	0.055
winner	0.550	0.348	788.394	1.550	0.402	0.085
winner-loser	0.697	0.577	255.856	0.215	0.155	0.031

Panel D

portfolio	Return		Sizeus	Cov	Disp	Change
	lc	usd				
loser	0.072	0.015	486.128	1.332	0.219	-0.003
medium	0.096	0.036	689.764	1.508	0.198	0.060
winner	0.109	0.049	851.370	1.631	0.463	0.081
winner-loser	0.037	0.034	365.242	0.299	0.244	0.084

average number of firms in each momentum portfolio = 21.258

Table 7

Momentum and Size

This table reports the holding period (from t to t+5) cumulative return in USD to momentum portfolios across three size groups (small, med and big).

At the beginning of each month t, we first sort stocks into three size groups based on the average monthly market capitalization over past 6 months from t-6 to t-1 (SIZE). If its SIZE is at the bottom(middle, top)1/3, then the stock is sorted into small(med, big) size group; within each size group, we further sort stocks into three momentum portfolios, if its past-6-month (from t-6 to t-1) cumulative return R(i,t-6,t-1) is at the bottom(middle ,top) 1/3 of the R(i,t-6,t-1)s in one particular size group, say, small size group, then the stock is sorted into the small-loser(small-medium, small-winner) group. Also, we construct the relative strength portfolio winner-loser within each size group. All the portfolios are held for another 6 months from t to t+5.

size	country	winner		medium		loser		winner-loser	
		mean	t	mean	t	mean	t	mean	t
small	Korea	0.026	0.682	0.026	0.707	0.000	0.012	0.026	1.850
	India	0.026	1.186	-0.018	-0.817	-0.002	-0.081	0.028	2.522
	Malaysia	0.032	1.107	0.045	1.357	0.015	0.506	0.017	1.320
	Taiwan	-0.027	-1.198	-0.021	-0.912	0.001	0.046	-0.029	-2.115
	China	0.181	5.833	0.127	4.839	0.114	3.945	0.067	2.798
	Indonesia	0.021	0.440	0.025	0.488	0.085	1.397	-0.064	-2.483
	South Africa	0.037	1.762	0.000	0.020	-0.026	-1.049	0.062	3.296
	Thailand	0.032	0.907	-0.002	-0.061	-0.032	-1.031	0.064	2.921
	Greece	0.105	2.384	0.099	2.124	0.098	2.125	0.007	0.444
	Turkey	0.151	3.129	0.185	3.669	0.070	1.838	0.081	2.676
	Philippine	-0.011	-0.389	-0.030	-1.129	-0.088	-3.828	0.077	3.210
	Pakistan	0.008	0.399	0.006	0.290	-0.018	-0.884	0.027	2.421
	Chile	0.086	4.820	0.082	4.323	0.019	0.961	0.068	4.133
	Sri Lanka	0.026	0.931	-0.044	-1.507	-0.064	-2.110	0.089	6.255
	Argentina	0.119	2.287	0.083	1.790	-0.015	-0.312	0.134	3.719
	Portugal	0.008	0.513	-0.007	-0.392	-0.040	-2.115	0.048	2.930
small	**overall**	**0.050**	**5.776**	**0.036**	**4.116**	**0.008**	**0.886**	**0.043**	**8.062**
middle	Korea	-0.006	-0.165	0.002	0.061	0.000	0.010	-0.006	-0.397
	India	0.043	2.219	0.037	1.781	0.006	0.277	0.037	3.149
	Malaysia	0.033	1.393	0.034	1.312	0.028	0.981	0.006	0.468
	Taiwan	-0.008	-0.358	-0.017	-0.739	-0.016	-0.623	0.008	0.557
	China	0.077	3.050	0.075	2.777	0.039	1.708	0.037	2.407
	Indonesia	-0.017	-0.471	-0.018	-0.460	0.015	0.342	-0.032	-1.278
	South Africa	0.029	1.248	-0.012	-0.567	-0.023	-0.986	0.052	3.392
	Thailand	0.008	0.282	0.012	0.429	-0.041	-1.403	0.049	3.678
	Greece	0.080	2.516	0.060	1.661	0.059	1.654	0.021	1.125
	Turkey	0.121	2.628	0.161	3.138	0.157	2.946	-0.036	-1.193
	Philippine	-0.048	-2.003	-0.015	-0.600	-0.031	-1.071	-0.017	-0.905
	Pakistan	0.037	1.722	0.036	1.590	0.038	1.460	-0.001	-0.075
	Chile	0.076	3.625	0.051	2.539	0.031	1.632	0.044	2.748
	Sri Lanka	-0.010	-0.452	-0.022	-0.915	0.005	0.181	-0.015	-0.930
	Argentina	0.092	1.954	0.062	1.523	0.045	1.202	0.047	1.343
	Portugal	0.066	3.515	0.022	1.144	0.008	0.423	0.058	3.462
middle	**overall**	**0.036**	**4.742**	**0.031**	**3.912**	**0.021**	**2.622**	**0.015**	**2.958**

big	Korea	-0.005	-0.183	0.008	0.282	0.014	0.417	-0.019	-1.339
	India	0.063	2.796	0.047	2.286	0.038	1.746	0.025	1.578
	Malaysia	0.061	2.826	0.038	1.854	0.022	0.944	0.039	3.411
	Taiwan	0.003	0.122	-0.007	-0.332	0.004	0.161	-0.001	-0.077
	China	0.017	0.715	0.013	0.560	-0.011	-0.534	0.028	2.388
	Indonesia	0.048	1.419	-0.013	-0.395	-0.017	-0.497	0.065	2.514
	South Africa	0.035	1.924	0.005	0.270	0.010	0.545	0.025	1.577
	Thailand	0.033	1.389	0.025	0.890	-0.008	-0.251	0.041	1.766
	Greece	0.090	2.888	0.065	2.330	0.071	2.183	0.019	1.097
	Turkey	0.158	2.939	0.130	2.902	0.128	2.584	0.030	1.101
	Philippine	0.021	0.886	0.024	0.873	0.010	0.353	0.012	0.796
	Pakistan	0.037	1.502	0.034	1.385	0.008	0.375	0.029	2.565
	Chile	0.107	4.898	0.064	3.437	0.064	3.425	0.044	3.440
	Sri Lanka	0.006	0.254	-0.009	-0.381	-0.048	-1.897	0.054	3.944
	Argentina	0.066	2.056	0.060	1.851	0.034	0.934	0.032	1.625
	Portugal	0.128	6.321	0.061	3.673	0.027	1.310	0.101	5.625
big	**overall**	**0.055**	**7.631**	**0.036**	**5.214**	**0.024**	**3.248**	**0.031**	**7.036**

Table 8

Momentum and Residual Analyst Coverage

This table reports the holding period (from t to t+5) cumulative return in USD to momentum portfolios across three non-zero coverage groups (low, med, and high).

At the beginning of each month t, we first sort stocks into four coverage groups based on their past-6-month analyst following (Cov) or residual analyst coverage (RCov). If its Cov is 0, then the stock is sorted into zero coverage group, for stocks with nonzero Cov, if its RCov is at the bottom(middle, top)1/3, then the stock is sorted into low(med, high) coverage group; within each coverage group, we further sort stocks into three momentum groups, if its past-6-month cumulative return (R(i,t-6,t-1)) is at the bottom(middle, top) 1/3 of the R(i,t-6,t-1)s in one particular coverage group, say, low coverage group, then the stock is sorted into the low-loser(low-medium, low-winner) group. Also, we construct the relative strength portfolio winner-loser within each coverage group. All the portfolios are held for another 6 months from t to t+5.

coverage	country	winner		medium		loser		winner-loser	
		mean	t	mean	t	mean	t	mean	t
low	Korea	-0.009	-0.264	-0.029	-0.839	-0.035	-1.038	0.027	1.561
	India	0.006	0.274	-0.041	-1.588	-0.054	-1.963	0.062	2.713
	Malaysia	0.062	1.866	0.026	0.812	0.004	0.129	0.058	1.968
	Taiwan	-0.051	-2.197	-0.056	-2.420	-0.048	-1.241	-0.019	-0.539
	China	0.102	2.593	0.055	1.650	0.085	1.955	0.072	1.670
	Indonesia	0.010	0.237	0.026	0.456	0.071	1.149	-0.060	-1.462
	South Africa	0.050	1.517	-0.035	-1.449	-0.035	-1.254	0.085	2.458
	Thailand	-0.058	-1.637	-0.048	-1.368	-0.069	-1.889	0.018	0.483
	Greece	0.133	1.433	0.090	1.628	0.179	1.522	0.010	0.068
	Turkey	0.168	3.445	0.191	3.632	0.164	3.179	0.010	0.285
	Philippine	-0.029	-0.964	-0.108	-3.916	-0.143	-3.668	0.072	1.867
	Pakistan	0.010	0.238	-0.007	-0.220	-0.063	-1.506	0.060	1.602
	Chile	0.037	1.759	0.046	2.198	0.003	0.144	0.034	1.613
	Sri Lanka	0.025	0.756	-0.040	-2.236	-0.067	-2.884	0.084	2.568
	Argentina	0.034	0.961	0.054	1.696	-0.040	-1.262	0.174	4.369
	Portugal	0.068	2.761	0.067	3.435	0.025	0.858	-0.006	-0.170
low	**overall**	**0.030**	**3.043**	**0.008**	**0.900**	**-0.004**	**-0.343**	**0.039**	**3.908**
medium	Korea	0.009	0.228	0.014	0.407	0.011	0.257	-0.002	-0.081
	India	0.032	1.276	0.035	1.453	-0.021	-0.862	0.057	2.376
	Malaysia	0.047	1.752	0.029	1.250	0.035	1.268	0.012	0.521
	Taiwan	-0.029	-0.948	-0.053	-2.034	-0.008	-0.278	-0.001	-0.052
	China	0.109	2.935	0.076	1.874	0.176	3.118	-0.026	-0.568
	Indonesia	0.138	2.022	-0.014	-0.312	0.079	1.806	0.059	0.927
	South Africa	-0.030	-1.338	-0.024	-0.976	-0.083	-3.055	0.053	2.382
	Thailand	-0.029	-1.104	-0.089	-3.654	-0.077	-2.574	0.049	1.612
	Greece	0.037	0.836	0.068	2.041	0.059	1.186	-0.035	-0.635
	Turkey	0.131	2.464	0.138	2.768	0.060	1.295	0.072	1.930
	Philippine	-0.045	-1.534	-0.022	-0.663	-0.048	-1.353	0.005	0.160
	Pakistan	-0.061	-2.288	0.037	1.307	-0.016	-0.495	-0.068	-2.205
	Chile	0.116	4.288	0.021	1.055	-0.067	-3.892	0.183	7.539
	Sri Lanka	-0.030	-1.187	-0.023	-0.755	-0.101	-4.195	0.041	1.787
	Argentina	0.030	0.981	0.038	1.360	-0.062	-2.038	0.092	2.740
	Portugal	0.094	4.060	0.039	1.758	0.017	0.694	0.051	1.911
medium	**overall**	**0.031**	**3.290**	**0.015**	**1.844**	**-0.005**	**-0.515**	**0.036**	**3.997**
high	Korea	0.000	0.008	0.024	0.784	0.016	0.458	-0.016	-0.984

	India	0.034	1.340	0.011	0.434	-0.041	-1.688	0.078	3.788
	Malaysia	0.052	2.060	0.066	2.753	0.032	1.207	0.020	0.898
	Taiwan	0.084	2.282	0.039	1.232	-0.019	-0.613	0.112	3.337
	China	0.042	1.176	0.003	0.092	0.064	1.615	-0.007	-0.179
	Indonesia	0.071	1.431	0.048	1.112	0.033	0.720	0.038	0.965
	South Africa	0.083	3.175	-0.005	-0.196	0.010	0.377	0.072	2.562
	Thailand	0.003	0.078	-0.016	-0.519	-0.048	-1.415	0.038	1.312
	Greece	0.066	1.610	0.040	1.263	0.029	0.815	0.059	1.545
	Turkey	0.070	1.756	0.127	2.606	0.115	2.372	-0.045	-1.362
	Philippine	0.024	0.868	0.077	2.442	0.008	0.119	-0.119	-2.239
	Pakistan	-0.016	-0.483	0.023	0.865	-0.088	-1.967	0.051	1.333
	Chile	0.019	0.969	-0.007	-0.314	-0.022	-0.958	0.041	2.052
	Sri Lanka	-0.043	-1.886	-0.025	-0.908	-0.052	-1.762	-0.005	-0.256
	Argentina	0.016	0.577	0.028	0.958	-0.087	-3.095	0.100	2.835
	Portugal	0.177	7.128	0.034	1.906	-0.007	-0.232	0.164	4.213
high	**overall**	**0.040**	**4.836**	**0.031**	**3.904**	**-0.004**	**-0.380**	**0.035**	**4.416**

Table 9

Momentum and Coverage Change

This table reports the mean and t-value of the holding period (from t to t+5) cumulative return in USD to momentum portfolios across three change groups (decrease, same and increase).
At the beginning of each month t, we first sort stocks into three change groups based on their CHANGE (changes in Cov during 6 months before portfolio formation from t-6 to t-1) –decrease, same and increase; within each change group, we further sort stocks into three momentum portfolios, if its past-6-month cumulative return R(i,t-6,t-1) is at the bottom(middle, top) 1/3 of the R(i,t-6,t-1)s in one particular change group, say, decrease group, then the stock is sorted into the decrease-loser(decrease-medium, decrease-winner)group. Also, we construct the relative strength portfolio winner-loser within each change group. All the portfolios are held for another 6 months from t to t+5.

change	country	winner		medium		loser		winner-loser	
		mean	t	mean	t	mean	t	mean	t
decrease	Korea	-0.027	-0.825	-0.027	-0.799	-0.028	-0.632	-0.008	-0.303
	India	-0.012	-0.518	-0.009	-0.316	-0.074	-2.779	0.061	3.128
	Malaysia	0.082	2.377	0.027	1.112	0.015	0.527	0.056	2.029
	Taiwan	-0.004	-0.138	-0.019	-0.701	0.012	0.252	-0.039	-1.059
	China	0.105	3.155	0.115	3.250	0.089	2.232	0.019	0.453
	Indonesia	0.039	0.603	0.021	0.474	0.107	1.431	-0.034	-0.632
	South Africa	0.027	0.955	-0.003	-0.115	-0.024	-0.796	0.047	1.653
	Thailand	0.031	0.791	-0.056	-1.697	-0.047	-1.202	0.089	3.019
	Greece	0.239	1.914	0.059	1.798	0.005	0.080	0.164	2.572
	Turkey	0.084	1.376	0.078	1.414	0.047	0.842	0.041	1.004
	Philippine	-0.026	-0.832	-0.018	-0.525	-0.027	-0.564	0.019	0.465
	Pakistan	-0.036	-1.094	-0.013	-0.419	0.005	0.129	-0.046	-1.590
	Chile	0.037	1.842	-0.028	-1.394	-0.038	-1.870	0.080	3.791
	Sri Lanka	-0.015	-0.563	-0.048	-1.945	-0.053	-1.976	0.046	1.888
	Argentina	0.048	1.284	0.121	2.644	-0.025	-0.624	0.076	3.474
	Portugal	0.077	2.697	0.065	2.889	0.049	1.558	0.044	0.979
decrease	**overall**	**0.033**	**3.091**	**0.012**	**1.448**	**-0.001**	**-0.114**	**0.033**	**3.824**
same	Korea	-0.008	-0.257	-0.005	-0.139	0.009	0.238	-0.017	-0.794
	India	-0.015	-0.525	0.000	0.002	-0.071	-2.497	0.061	1.891
	Malaysia	0.024	0.742	0.027	0.855	-0.062	-1.482	0.083	2.244
	Taiwan	-0.019	-0.670	-0.060	-2.167	-0.063	-1.651	0.019	0.500
	China	0.061	1.404	0.083	2.021	0.024	0.536	0.050	1.095
	Indonesia	0.063	0.990	0.027	0.599	-0.073	-1.056	0.056	1.089
	South Africa	0.071	1.671	-0.022	-0.707	0.009	0.297	0.104	2.260
	Thailand	-0.040	-0.927	-0.072	-1.938	-0.101	-1.953	0.032	0.639
	Greece	0.151	1.694	0.159	1.873	-0.041	-0.843	0.148	1.814
	Turkey	0.076	1.586	0.161	2.892	0.079	1.277	-0.022	-0.424
	Philippine	-0.025	-0.674	-0.020	-0.534	-0.049	-1.003	0.054	1.179
	Pakistan	-0.039	-1.021	-0.004	-0.136	0.006	0.131	-0.040	-1.041
	Chile	0.061	2.367	0.032	1.478	-0.033	-1.359	0.100	3.511
	Sri Lanka	-0.015	-0.676	-0.051	-2.226	-0.076	-2.794	0.061	2.897
	Argentina	0.120	2.576	0.096	2.184	-0.020	-0.418	0.150	2.265
	Portugal	0.072	3.318	0.103	3.652	0.025	0.771	0.033	0.991
same	**overall**	**0.026**	**2.503**	**0.020**	**2.072**	**-0.029**	**-2.664**	**0.047**	**4.619**

increase	Korea	0.026	0.761	0.041	1.095	0.006	0.162	0.026	1.008
	India	0.017	0.739	0.014	0.577	-0.054	-2.111	0.071	4.060
	Malaysia	0.063	1.970	0.020	0.937	0.024	0.847	0.038	1.747
	Taiwan	0.077	2.269	0.001	0.021	-0.009	-0.340	0.115	3.345
	China	0.147	3.114	0.040	1.252	0.054	1.341	0.068	1.565
	Indonesia	0.093	2.165	0.014	0.342	0.056	1.121	0.031	0.689
	South Africa	-0.010	-0.444	-0.031	-1.301	-0.057	-2.281	0.050	2.424
	Thailand	-0.040	-1.276	-0.061	-2.160	-0.075	-1.956	0.041	1.051
	Greece	0.065	1.365	0.065	1.926	0.037	0.798	0.006	0.120
	Turkey	0.163	3.577	0.131	2.817	0.171	3.348	-0.008	-0.283
	Philippine	-0.017	-0.363	-0.026	-0.779	-0.013	-0.294	0.013	0.268
	Pakistan	-0.007	-0.259	-0.006	-0.253	-0.034	-0.864	0.011	0.340
	Chile	0.031	1.305	0.009	0.550	-0.061	-2.680	0.093	4.331
	Sri Lanka	-0.025	-0.926	-0.053	-2.269	-0.055	-1.949	0.050	2.411
	Argentina	0.063	2.249	-0.008	-0.262	-0.078	-2.624	0.129	3.803
	Portugal	0.129	5.429	0.055	2.936	0.017	0.782	0.122	5.345
increase	**overall**	**0.047**	**5.210**	**0.012**	**1.515**	**-0.002**	**-0.213**	**0.051**	**6.223**

Table 10

Momentum and Forecast Dispersion

This table reports the mean and t-value of the holding period (from t to t+5) cumulative return in USD to momentum portfolios across three dispersion groups (small, med and large).
At the beginning of each month t, we first sort stocks into three dispersion groups based on their DISPERSION (dispersion of forecasts made during 6 months before portfolio formation from t-6 to t-1, which is calculated as absolute value of standard deviation of forecasts over mean forecast, i.e. |std/mean|) –small, med and large; within each dispersion group, we further sort stocks into three momentum portfolios, if its past-6-month cumulative return R(i,t-6,t-1) is at the bottom(middle, top) 1/3 of the R(i,t-6,t-1)s in one particular dispersion group, say, small group, then the stock is sorted into the small-loser(small-medium, small-winner)group. Also, we construct the relative strength portfolio winner-loser within each dispersion group. All the portfolios are held for another 6 months from t to t+5.

dispersion	country	winner		medium		loser		winner-loser	
		mean	t	mean	t	mean	t	mean	t
small	Korea	-0.022	-0.815	0.001	0.029	-0.018	-0.518	-0.004	-0.193
	India	0.033	1.417	-0.027	-1.037	-0.083	-3.391	0.116	6.003
	Malaysia	0.057	1.867	0.028	1.237	0.016	0.569	0.041	1.649
	Taiwan	-0.021	-0.797	-0.033	-1.391	0.006	0.128	-0.037	-0.825
	China	0.076	1.969	0.041	1.293	0.091	2.032	0.038	0.799
	Indonesia	0.032	0.943	-0.011	-0.300	0.054	0.891	-0.022	-0.441
	South Africa	-0.010	-0.400	-0.033	-1.263	-0.028	-1.088	0.017	0.674
	Thailand	-0.030	-1.067	-0.044	-1.520	-0.079	-2.554	0.056	1.895
	Greece	0.173	1.936	0.114	1.896	0.247	2.425	-0.027	-0.242
	Turkey	0.130	2.480	0.094	2.207	0.106	2.136	0.023	0.739
	Philippine	0.019	0.611	-0.007	-0.196	-0.023	-0.471	-0.076	-2.082
	Pakistan	0.014	0.336	-0.030	-1.079	-0.076	-2.262	0.060	1.633
	Chile	0.052	2.495	0.021	1.250	0.015	0.759	0.037	1.735
	Sri Lanka	-0.002	-0.064	-0.023	-0.926	-0.047	-2.023	0.045	1.508
	Argentina	0.074	1.855	0.020	0.611	0.022	0.616	0.079	1.477
	Portugal	0.131	5.066	0.073	3.777	-0.008	-0.344	0.115	3.895
small	**overall**	**0.040**	**4.231**	**0.009**	**1.126**	**0.007**	**0.683**	**0.028**	**2.891**
medium	Korea	-0.002	-0.057	-0.009	-0.288	-0.001	-0.015	-0.001	-0.057
	India	0.008	0.343	0.028	1.242	-0.015	-0.601	0.023	1.177
	Malaysia	0.030	1.228	0.047	1.995	0.026	0.989	0.004	0.178
	Taiwan	0.059	1.928	-0.014	-0.486	-0.056	-1.960	0.092	2.905
	China	0.051	1.622	0.058	1.514	0.095	2.007	-0.014	-0.295
	Indonesia	0.078	1.498	0.049	1.058	0.062	1.263	0.016	0.398
	South Africa	0.008	0.297	-0.047	-1.944	-0.017	-0.617	0.025	0.891
	Thailand	-0.044	-1.586	-0.049	-1.855	-0.102	-3.208	0.051	1.630
	Greece	0.072	1.397	0.064	1.924	0.036	1.047	0.068	1.256
	Turkey	0.083	1.995	0.146	3.063	0.159	3.024	-0.074	-1.824
	Philippine	0.005	0.154	-0.056	-2.026	-0.056	-1.491	0.002	0.063
	Pakistan	0.008	0.286	0.025	1.004	0.008	0.197	-0.010	-0.272
	Chile	0.041	2.010	0.018	0.955	0.002	0.111	0.039	2.025
	Sri Lanka	-0.006	-0.247	-0.046	-2.174	-0.057	-2.078	0.030	1.314
	Argentina	0.034	1.117	0.002	0.067	-0.037	-1.268	0.063	1.613
	Portugal	0.102	4.115	0.055	2.730	0.055	1.842	0.011	0.305
medium	**overall**	**0.030**	**3.665**	**0.016**	**2.036**	**0.004**	**0.393**	**0.020**	**2.490**

large	Korea	0.037	0.854	0.003	0.073	0.027	0.648	0.011	0.376
	India	0.042	1.701	-0.003	-0.127	-0.037	-1.394	0.079	4.313
	Malaysia	0.062	2.012	0.064	2.095	0.013	0.469	0.048	2.009
	Taiwan	0.024	0.690	-0.035	-1.229	-0.079	-2.642	0.098	3.348
	China	0.211	4.087	0.017	0.524	0.089	2.571	0.119	2.530
	Indonesia	0.123	2.060	0.029	0.556	0.122	2.004	0.001	0.016
	South Africa	0.104	3.214	-0.011	-0.436	-0.033	-1.114	0.137	4.890
	Thailand	-0.021	-0.543	-0.035	-0.979	-0.063	-1.785	0.029	0.914
	Greece	-0.010	-0.321	-0.001	-0.022	-0.025	-0.498	0.001	0.028
	Turkey	0.151	2.967	0.199	3.458	0.108	2.381	0.043	1.369
	Philippine	-0.050	-1.793	-0.026	-0.876	-0.066	-1.088	-0.029	-0.683
	Pakistan	-0.077	-2.112	0.017	0.564	-0.096	-2.270	0.003	0.081
	Chile	0.056	2.188	0.008	0.332	-0.068	-2.809	0.124	5.429
	Sri Lanka	-0.033	-1.228	-0.090	-3.602	-0.076	-2.511	0.041	1.754
	Argentina	0.068	2.228	-0.004	-0.134	-0.088	-2.900	0.158	4.563
	Portugal	0.059	2.520	0.064	2.787	-0.010	-0.342	0.036	0.955
large	**overall**	**0.045**	**4.576**	**0.012**	**1.371**	**-0.015**	**-1.451**	**0.056**	**6.442**

Table 11

Residual Analyst Coverage, Coverage Change and Momentum

This table reports the mean and t-value of the holding period (from t to t+5) cumulative return in USD to momentum portfolios across 9 coverage-change groups (low-decrease/same/increase, med-decrease/same/increase, high- decrease/same/increase).

To form the three-way sorted portfolios, at the beginning of each month t, we first sort stocks into three non-zero coverage groups based on their residual coverage RCov, top 1/3 is high coverage, bottom 1/3 is low coverage, and the middle 1/3 is med coverage; furthermore, within each coverage group, we sort stocks into three change groups based on their changes in Cov during the formation period from t-6 to t-1— decrease, same and increase; finally, within each coverage-change group, we further form momentum portfolios based on their past-6-month cumulative return R(i,t-6,t-1), top 1/3 is winner, bottom 1/3 is loser, and middle 1/3 is medium. And we construct relative strength portfolio within each of the 9 coverage-change groups. Eventually, we have 36 coverage-change-momentum portfolios at each month t and hold the portfolios for another 6 months from t to t+5.

portfolio	country	winner		medium		loser		winner-loser	
		mean	t	mean	t	mean	t	mean	t
low-decrease	Korea	-0.026	-0.667	-0.061	-1.896	-0.041	-0.890	0.005	0.133
	India	0.018	0.600	-0.042	-1.365	-0.119	-2.944	0.140	3.311
	Malaysia	0.067	1.661	0.045	1.037	0.036	0.880	0.043	1.178
	Taiwan	-0.048	-1.319	-0.022	-0.656	-0.123	-2.106	0.021	0.404
	China	0.033	0.726	0.072	1.549	0.035	0.561	-0.040	-0.535
	Indonesia	0.058	0.730	0.165	1.674	0.206	1.217	-0.120	-0.637
	South Africa	0.014	0.374	0.000	0.006	0.005	0.102	0.017	0.368
	Thailand	-0.072	-1.336	-0.073	-2.111	-0.018	-0.302	-0.074	-1.623
	Greece	0.034	0.486	0.016	0.282	0.147	1.114	-0.077	-0.721
	Turkey	0.138	1.971	0.149	2.382	0.157	2.284	0.033	0.567
	Philippine	-0.034	-0.783	-0.085	-2.671	0.021	0.254	-0.079	-1.074
	Pakistan	0.033	0.442	-0.018	-0.448	-0.034	-0.185	0.480	5.163
	Chile	0.021	0.844	0.015	0.541	0.023	0.706	0.015	0.435
	Sri Lanka	-0.076	-2.826	-0.054	-2.230	-0.063	-1.155	-0.037	-0.567
	Argentina	-0.036	-0.875	0.008	0.254	-0.068	-1.267	0.092	1.776
	Portugal	-0.016	-0.580	0.061	1.826	-0.007	-0.136	-0.031	-0.569
low-decrease	**overall**	**0.010**	**0.802**	**0.007**	**0.598**	**0.013**	**0.708**	**0.011**	**0.607**
low-same	Korea	-0.022	-0.608	-0.004	-0.092	-0.010	-0.242	-0.017	-0.720
	India	-0.058	-1.734	-0.075	-2.264	-0.103	-2.670	0.063	1.646
	Malaysia	-0.081	-1.579	0.004	0.082	-0.175	-1.972	0.029	0.430
	Taiwan	-0.044	-1.268	-0.103	-3.262	-0.028	-0.459	-0.037	-0.656
	China	0.000	0.001	0.027	0.788	-0.003	-0.056	-0.088	-2.183
	Indonesia	-0.067	-1.061	0.055	0.889	-0.022	-0.231	-0.017	-0.263
	South Africa	0.038	0.753	0.031	0.696	-0.035	-0.677	0.086	1.350
	Thailand	-0.070	-0.886	-0.052	-1.135	-0.333	-3.674	0.089	1.166
	Greece	0.197	1.120	0.141	1.313	0.007	0.096	-0.196	-1.821
	Turkey	0.025	0.323	0.229	3.066	-0.049	-0.442	-0.081	-0.841
	Philippine	-0.076	-1.133	-0.084	-1.769	-0.216	-4.053	0.024	0.321
	Pakistan	0.017	0.187	-0.018	-0.398	0.038	0.324	-0.014	-0.143
	Chile	0.000	0.008	0.055	2.068	-0.035	-1.146	0.042	1.070
	Sri Lanka	-0.035	-1.236	-0.039	-1.730	-0.093	-3.555	0.063	1.456
	Argentina	0.152	1.720	0.098	1.558	0.439	2.138	-0.122	-0.484
	Portugal	0.035	0.923	0.131	3.932	0.016	0.211	0.020	0.241
low-same	**overall**	**-0.015**	**-1.070**	**0.014**	**1.092**	**-0.060**	**-3.613**	**0.012**	**0.880**

low-increase	Korea	0.091	1.056	-0.001	-0.021	-0.072	-1.766	0.160	1.988
	India	-0.054	-1.736	-0.014	-0.501	-0.037	-0.687	-0.015	-0.309
	Malaysia	0.045	1.092	-0.050	-1.934	-0.005	-0.102	0.003	0.061
	Taiwan	-0.043	-0.876	-0.053	-1.550	-0.155	-3.165	-0.103	-2.858
	China	0.354	3.715	0.219	3.763	-0.045	-0.884	0.223	3.750
	Indonesia	-0.037	-0.691	0.025	0.428	-0.057	-0.826	0.041	0.723
	South Africa	-0.071	-1.570	-0.064	-2.280	0.065	1.163	-0.119	-1.559
	Thailand	-0.083	-1.013	0.031	0.518	-0.090	-0.962	0.130	1.993
	Greece	0.239	0.879	0.134	1.743	0.011	0.038	0.753	1.335
	Turkey	0.183	2.827	0.214	3.354	0.118	1.930	0.098	1.482
	Philippine	-0.174	-2.497	-0.145	-3.609	-0.248	-1.841	-0.045	-0.260
	Pakistan	-0.040	-0.828	-0.086	-2.623	-0.176	-1.487	0.196	2.169
	Chile	0.036	0.829	0.025	1.052	-0.047	-1.260	0.060	1.614
	Sri Lanka	0.187	2.059	-0.037	-1.323	0.088	1.107	0.225	1.592
	Argentina	0.039	0.544	0.037	1.044	-0.145	-2.713	0.306	3.262
	Portugal	0.058	1.560	0.075	2.549	-0.085	-1.917	0.078	1.175
low-increase	**overall**	**0.045**	**2.417**	**0.016**	**1.374**	**-0.029**	**-1.632**	**0.082**	**3.692**
med- decrease	Korea	-0.026	-0.481	-0.024	-0.542	0.090	1.294	-0.113	-2.934
	India	-0.016	-0.460	0.033	0.791	-0.094	-2.967	0.048	1.120
	Malaysia	0.030	0.739	0.077	2.389	0.075	1.524	-0.031	-0.663
	Taiwan	-0.066	-1.380	-0.060	-1.771	-0.077	-1.541	-0.075	-1.786
	China	0.172	2.388	0.087	1.786	0.115	1.263	-0.012	-0.150
	Indonesia	0.287	1.816	0.039	0.679	0.288	2.930	-0.087	-0.616
	South Africa	-0.047	-1.660	-0.100	-2.770	-0.069	-1.182	0.020	0.434
	Thailand	-0.045	-1.062	-0.023	-0.487	-0.120	-2.417	0.047	0.905
	Greece	-0.080	-1.703	0.043	0.973	-0.193	-2.094	0.156	1.676
	Turkey	0.005	0.076	0.026	0.352	-0.084	-1.560	0.058	1.497
	Philippine	-0.068	-1.525	-0.038	-0.858	-0.025	-0.295	-0.121	-1.586
	Pakistan	-0.066	-0.800	-0.002	-0.050	0.444	1.285	-0.491	-1.365
	Chile	0.019	0.667	-0.061	-2.515	0.016	0.422	0.042	0.916
	Sri Lanka	-0.067	-1.645	-0.016	-0.460	-0.126	-2.907	0.032	0.615
	Argentina	0.034	0.932	-0.035	-1.106	-0.023	-0.487	0.044	0.933
	Portugal	0.049	1.790	0.068	2.227	0.034	0.706	0.001	0.023
med- decrease	**overall**	**0.013**	**0.786**	**0.001**	**0.125**	**0.012**	**0.667**	**-0.018**	**-1.030**
med- same	Korea	0.002	0.055	0.008	0.244	0.015	0.283	-0.005	-0.111
	India	0.023	0.562	-0.004	-0.112	-0.115	-3.484	0.098	2.042
	Malaysia	0.040	1.033	-0.021	-0.822	-0.074	-1.706	0.115	2.096
	Taiwan	-0.063	-1.554	-0.043	-1.341	0.064	0.588	-0.154	-1.489
	China	0.008	0.100	0.104	1.885	-0.292	-5.606	0.104	1.063
	Indonesia	0.011	0.161	-0.022	-0.366	-0.040	-0.506	0.071	1.193
	South Africa	0.004	0.122	-0.015	-0.444	0.081	1.646	-0.026	-0.506
	Thailand	-0.145	-2.378	-0.111	-2.634	-0.248	-3.860	0.092	1.343
	Greece	0.155	1.360	0.027	0.518	0.384	3.499	-0.482	-4.701
	Turkey	0.030	0.438	0.087	1.365	0.104	1.101	-0.033	-0.442
	Philippine	-0.080	-1.851	-0.002	-0.068	-0.088	-1.350	0.099	2.664
	Pakistan	-0.053	-1.058	-0.029	-0.792	-0.050	-0.708	-0.039	-0.624
	Chile	0.096	2.311	0.021	0.824	-0.074	-2.304	0.174	3.554
	Sri Lanka	-0.067	-2.387	-0.056	-1.608	-0.166	-6.294	0.079	2.460
	Argentina	0.125	1.494	0.001	0.014	-0.007	-0.067	0.208	1.174
	Portugal	0.061	1.476	0.077	2.416	0.069	0.559	0.027	0.656

med- same	**overall**	**0.002**	**0.121**	**-0.004**	**-0.380**	**-0.041**	**-2.216**	**0.037**	**2.152**
med- increase	Korea	0.117	1.902	0.049	0.975	0.003	0.062	0.151	3.246
	India	0.081	1.974	0.017	0.663	-0.058	-1.876	0.139	3.085
	Malaysia	-0.004	-0.140	0.030	0.994	-0.038	-1.223	0.010	0.322
	Taiwan	-0.080	-2.234	-0.003	-0.098	-0.094	-1.966	0.044	0.759
	China	0.135	2.496	0.139	2.997	0.239	2.891	-0.033	-0.454
	Indonesia	0.055	1.048	0.024	0.489	0.013	0.231	0.013	0.168
	South Africa	-0.022	-0.739	-0.064	-2.167	-0.085	-2.200	0.081	1.995
	Thailand	-0.045	-1.057	-0.099	-3.284	-0.060	-0.884	0.083	1.060
	Greece	0.043	0.588	0.075	1.767	0.166	1.265	-0.044	-0.328
	Turkey	0.213	3.138	0.193	3.378	0.154	2.448	0.082	1.264
	Philippine	0.034	0.416	0.018	0.394	-0.119	-2.170	0.032	0.718
	Pakistan	-0.056	-1.391	-0.007	-0.233	-0.012	-0.170	-0.058	-0.966
	Chile	0.072	1.884	-0.020	-0.851	-0.105	-3.373	0.183	5.506
	Sri Lanka	0.018	0.392	-0.085	-2.739	-0.152	-3.812	0.220	3.594
	Argentina	-0.008	-0.187	0.039	0.882	0.028	0.455	-0.053	-0.874
	Portugal	0.105	2.623	0.046	2.168	-0.085	-1.953	0.117	3.025
med- increase	**overall**	**0.048**	**3.633**	**0.022**	**2.173**	**-0.011**	**-0.823**	**0.074**	**4.890**
high- decrease	Korea	-0.013	-0.277	0.035	0.731	0.027	0.335	-0.029	-0.445
	India	0.032	0.577	0.015	0.335	-0.130	-3.216	0.141	2.338
	Malaysia	0.034	0.910	0.026	0.831	0.023	0.484	0.000	-0.003
	Taiwan	-0.106	-1.534	-0.049	-1.150	-0.122	-1.054	-0.022	-0.297
	China	0.044	0.664	0.084	2.459	0.099	1.441	-0.135	-1.661
	Indonesia	0.216	1.809	0.161	2.250	0.309	3.246	-0.159	-2.622
	South Africa	0.173	3.728	0.063	1.522	0.021	0.267	0.181	1.952
	Thailand	0.072	1.159	0.085	1.373	-0.117	-1.771	0.210	2.976
	Greece	0.092	1.124	0.032	0.684	-0.012	-0.145	0.097	1.120
	Turkey	-0.112	-1.844	-0.035	-0.534	-0.059	-0.799	-0.070	-1.187
	Philippine	0.109	2.326	0.139	2.674	0.254	1.259	-0.210	-1.473
	Pakistan	-0.057	-0.657	-0.037	-0.694	0.216	2.294	-0.025	-0.114
	Chile	0.019	0.542	-0.048	-1.868	-0.035	-1.032	0.117	2.644
	Sri Lanka	-0.041	-0.855	-0.034	-0.952	-0.164	-2.212	0.116	1.918
	Argentina	0.071	1.287	-0.033	-0.833	-0.082	-0.977	0.149	2.099
	Portugal	0.164	1.987	0.149	3.422	0.237	1.246	0.010	0.052
high- decrease	**overall**	**0.039**	**2.431**	**0.031**	**2.488**	**0.018**	**0.750**	**0.011**	**0.511**
high- same	Korea	-0.045	-0.887	0.016	0.374	-0.064	-1.419	-0.009	-0.166
	India	0.091	1.669	-0.007	-0.157	0.047	0.670	0.033	0.260
	Malaysia	0.015	0.323	0.071	2.106	-0.127	-1.377	0.108	2.326
	Taiwan	0.075	1.075	0.004	0.096	0.204	0.873	0.061	0.439
	China	0.084	0.668	0.076	1.138	0.078	0.565	0.024	0.195
	Indonesia	-0.056	-0.792	0.018	0.241	-0.054	-0.252	0.026	0.146
	South Africa	0.183	2.453	0.040	0.971	0.116	2.394	0.125	1.473
	Thailand	-0.185	-3.122	-0.054	-1.181	-0.119	-1.470	-0.089	-1.696
	Greece	-0.086	-1.061	0.071	1.490				
	Turkey	0.052	0.713	0.108	1.617	-0.014	-0.162	-0.086	-1.313
	Philippine	0.027	0.215	0.062	1.265				
	Pakistan	-0.096	-1.515	0.010	0.241	0.110	1.262	0.000	-0.001
	Chile	0.011	0.433	0.011	0.360	0.185	2.984	-0.138	-1.964
	Sri Lanka	-0.053	-1.422	-0.067	-2.015	-0.089	-1.682	0.022	0.395
	Argentina	0.241	3.235	0.100	1.881	0.047	0.357	0.185	1.017

	Portugal	-0.036	-0.705	0.004	0.157	0.102	1.080	-0.127	-1.006
high- same	**overall**	**0.003**	**0.181**	**0.023**	**1.932**	**0.003**	**0.148**	**-0.011**	**-0.420**
high- increase	Korea	0.013	0.422	0.045	1.294	0.046	1.232	-0.028	-1.366
	India	0.030	1.063	-0.014	-0.492	-0.043	-1.486	0.080	2.915
	Malaysia	0.069	2.235	0.074	2.289	0.040	1.085	-0.002	-0.080
	Taiwan	0.130	2.986	0.069	1.794	0.029	0.911	0.130	2.633
	China	0.018	0.412	0.018	0.466	0.036	0.867	0.055	1.004
	Indonesia	0.037	0.687	0.080	1.338	-0.003	-0.058	0.034	0.666
	South Africa	0.002	0.057	-0.016	-0.509	-0.020	-0.548	0.010	0.260
	Thailand	-0.013	-0.268	-0.029	-0.807	-0.045	-0.916	-0.003	-0.062
	Greece	0.088	1.663	0.034	0.943	0.022	0.309	0.165	2.098
	Turkey	0.130	2.821	0.128	2.485	0.173	2.889	-0.042	-0.872
	Philippine	-0.059	-1.670	-0.003	-0.096	-0.084	-1.196	-0.077	-1.267
	Pakistan	0.029	0.575	-0.011	-0.323	-0.100	-1.456	0.146	2.298
	Chile	0.004	0.166	-0.037	-1.782	-0.075	-2.842	0.067	2.822
	Sri Lanka	-0.060	-2.362	-0.038	-1.277	-0.021	-0.451	-0.005	-0.134
	Argentina	-0.049	-1.544	-0.020	-0.584	-0.113	-3.171	0.055	1.459
	Portugal	0.183	6.739	0.027	1.154	-0.014	-0.410	0.184	4.057
high- increase	**overall**	**0.035**	**3.549**	**0.021**	**2.271**	**0.001**	**0.089**	**0.036**	**3.374**

Table 12

Residual Analyst Coverage, Forecast Dispersion and Momentum

This table reports the mean and t-value of the holding period (from t to t+5) cumulative return in USD to momentum portfolios across 9 coverage-dispersion groups (low-small/middle/large, med-small/middle/large, high- small/middle/large).

To form the three-way sorted portfolios, at the beginning of each month t, we first sort stocks into three non-zero coverage groups based on their residual coverage RCov, top 1/3 is high coverage, bottom 1/3 is low coverage, and the middle 1/3 is med coverage; furthermore, within each coverage group, we sort stocks into three dispersion groups based on their forecast dispersions during the formation period from t-6 to t-1—small, middle and large; finally, within each coverage-dispersion group, we further form momentum portfolios based on their past-6-month cumulative return R(i,t-6,t-1), top 1/3 is winner, bottom 1/3 is loser, and middle 1/3 is medium. And we construct relative strength portfolio within each of the 9 coverage-dispersion groups. Eventually, we have 36 coverage-dispersion-momentum portfolios at each month t and hold the portfolios for another 6 months from t to t+5.

Portfolio	country	winner		medium		loser		winner-loser	
		mean	t	mean	t	mean	t	mean	t
low-small	Korea	0.005	0.117	0.017	0.385	-0.037	-1.012	0.030	0.975
	India	0.029	0.600	-0.110	-2.932	-0.160	-4.286	0.132	2.661
	Malaysia	0.009	0.197	-0.069	-2.200	-0.088	-2.327	0.079	1.478
	Taiwan	-0.028	-0.518	-0.030	-0.848	-0.100	-1.285	0.186	2.725
	China	0.207	1.986	0.145	2.160	0.154	1.948	0.163	1.410
	Indonesia	-0.030	-0.526	0.073	1.151	0.100	0.799	0.060	0.460
	South Africa	0.056	1.398	-0.117	-2.952	-0.023	-0.636	-0.003	-0.049
	Thailand	0.060	0.998	-0.137	-1.788	-0.084	-0.992	0.392	1.339
	Greece	0.309	0.928	-0.088	-0.583	0.079	0.320		
	Turkey	0.137	2.216	0.217	2.863	0.267	3.324	-0.075	-0.798
	Philippine	-0.064	-0.585	-0.049	-0.908	0.029	0.292	-0.214	-1.024
	Pakistan	-0.111	-1.726	-0.120	-1.955	-0.093	-1.314	0.153	1.114
	Chile	0.070	2.288	0.020	0.543	0.007	0.222	-0.021	-0.573
	Sri Lanka	-0.011	-0.316	-0.006	-0.129	-0.080	-2.885	0.121	2.418
	Argentina	0.275	1.996	-0.023	-0.366	0.168	2.700	0.091	
	Portugal	0.037	0.970	0.033	0.936	0.063	1.497	-0.080	-3.742
low-small	**overall**	**0.049**	**2.912**	**-0.001**	**-0.050**	**0.000**	**-0.025**	**0.041**	**1.978**
low-middle	Korea	-0.002	-0.051	-0.039	-1.000	-0.028	-0.691	0.035	1.086
	India	0.033	1.072	-0.009	-0.246	-0.043	-1.232	0.050	1.409
	Malaysia	0.083	1.246	0.016	0.382	0.001	0.033	0.139	1.674
	Taiwan	-0.039	-1.082	-0.044	-1.382	-0.068	-1.585	0.034	0.606
	China	0.076	1.436	0.053	1.479	0.030	0.457	-0.094	-0.746
	Indonesia	0.169	1.919	-0.051	-1.189	0.100	0.983	0.123	0.788
	South Africa	0.062	1.078	-0.027	-0.749	-0.026	-0.740	0.053	0.462
	Thailand	-0.103	-2.926	-0.039	-0.783	-0.110	-2.411	-0.042	-0.593
	Greece	0.452	2.275	0.101	1.609	0.086	1.125	0.609	1.538
	Turkey	0.189	2.867	0.181	2.792	0.100	1.708	0.116	1.964
	Philippine	-0.137	-3.114	-0.008	-0.144	-0.127	-3.217	0.054	0.505
	Pakistan	0.112	1.805	-0.081	-2.440	-0.029	-0.560	0.133	1.558
	Chile	0.051	1.721	0.049	1.824	0.072	2.327	-0.049	-1.076
	Sri Lanka	0.040	0.785	-0.057	-2.406	-0.026	-0.666	0.069	1.272
	Argentina	0.037	0.946	0.011	0.232	-0.004	-0.116	0.114	1.621
	Portugal	0.007	0.332	0.029	1.675	0.066	1.868	0.007	0.106
low-middle	**overall**	**0.060**	**3.763**	**0.001**	**0.074**	**-0.002**	**-0.135**	**0.073**	**3.413**

low-large	Korea	-0.010	-0.233	-0.021	-0.494	0.005	0.117	0.014	0.435
	India	-0.041	-1.260	-0.036	-1.157	-0.065	-1.750	-0.002	-0.048
	Malaysia	0.101	2.184	-0.003	-0.071	0.082	1.985	0.010	0.167
	Taiwan	-0.113	-3.090	-0.065	-1.891	-0.097	-1.675	-0.439	-4.185
	China	0.196	2.838	0.093	1.948	0.032	0.486	0.326	1.713
	Indonesia	-0.062	-1.205	-0.108	-1.671	0.225	2.256	-0.112	-1.180
	South Africa	0.110	1.871	0.070	1.500	-0.069	-1.767	0.056	1.051
	Thailand	-0.082	-1.222	-0.101	-1.712	0.001	0.012	-0.101	-1.128
	Greece	0.070	1.023	-0.049	-0.688	-0.095	-1.519		
	Turkey	0.151	2.365	0.228	3.504	0.185	2.404	0.139	1.962
	Philippine	-0.160	-3.940	-0.120	-2.944	-0.047	-0.947	-0.394	-2.256
	Pakistan	-0.069	-1.161	0.082	0.820	-0.139	-1.999		
	Chile	-0.032	-1.244	-0.009	-0.312	0.023	0.599	0.044	0.910
	Sri Lanka	-0.059	-2.186	-0.101	-3.210	-0.081	-2.370	0.095	1.413
	Argentina	0.047	0.950	-0.039	-0.685	-0.178	-4.150		
	Portugal	0.106	1.976	0.108	2.196	-0.005	-0.091	-0.388	-1.754
low-large	**overall**	**0.011**	**0.806**	**-0.003**	**-0.215**	**0.011**	**0.709**	**0.015**	**0.724**
med-small	Korea	-0.015	-0.500	0.037	0.919	0.059	0.967	-0.085	-1.503
	India	0.000	-0.009	-0.044	-1.390	-0.067	-1.597	0.079	1.653
	Malaysia	0.047	1.070	0.014	0.624	0.032	0.953	-0.009	-0.232
	Taiwan	-0.080	-1.704	-0.048	-1.606	0.001	0.009	-0.185	-1.488
	China	0.076	1.486	0.185	3.700	0.194	2.323	-0.022	-0.243
	Indonesia	0.138	1.980	-0.050	-1.106	0.111	1.412	-0.060	-0.429
	South Africa	-0.037	-1.325	-0.013	-0.381	-0.003	-0.070	0.042	0.699
	Thailand	-0.027	-0.644	-0.025	-0.625	-0.142	-2.772	0.101	0.677
	Greece	-0.070	-1.081	0.258	2.180	0.081	0.753		
	Turkey	0.184	2.488	0.037	0.619	0.038	0.541	0.155	1.794
	Philippine	-0.148	-2.380	0.062	1.381	-0.130	-1.781	0.051	0.579
	Pakistan	-0.043	-0.697	-0.038	-0.929	-0.078	-1.527	0.162	1.881
	Chile	0.038	1.410	-0.019	-0.750	-0.018	-0.561	0.086	1.600
	Sri Lanka	-0.103	-3.209	-0.076	-2.223	-0.048	-1.257	-0.046	-1.163
	Argentina	0.060	1.565	0.019	0.514	0.138	2.778		
	Portugal	0.060	1.393	-0.032	-0.982	0.006	0.164	0.147	
med-small	**overall**	**0.020**	**1.553**	**0.009**	**0.814**	**0.012**	**0.757**	**0.016**	**0.692**
med-middle	Korea	-0.026	-0.788	0.014	0.364	0.013	0.242	-0.039	-0.718
	India	0.058	1.723	0.031	1.198	-0.047	-1.504	0.129	3.316
	Malaysia	0.004	0.131	0.015	0.505	0.012	0.297	-0.077	-1.819
	Taiwan	-0.013	-0.300	-0.066	-1.938	-0.010	-0.271	-0.049	-0.812
	China	0.067	1.476	0.068	1.051	0.074	1.118	0.028	0.559
	Indonesia	0.127	1.247	0.051	0.636	0.065	1.117	-0.080	-1.287
	South Africa	-0.077	-2.260	0.002	0.056	-0.010	-0.275	0.018	0.405
	Thailand	-0.055	-1.350	-0.117	-2.928	-0.121	-2.854	0.114	1.601
	Greece	0.081	0.975	0.160	3.347	0.049	0.887	0.113	0.807
	Turkey	0.098	1.715	0.157	2.277	0.100	1.992	-0.018	-0.280
	Philippine	-0.009	-0.227	-0.073	-1.697	-0.111	-2.140	-0.203	-1.440
	Pakistan	0.032	0.677	0.001	0.015	0.034	0.633	-0.102	-1.343
	Chile	0.070	2.110	0.011	0.445	-0.042	-1.688	0.128	2.554
	Sri Lanka	0.056	1.601	-0.023	-0.585	-0.076	-1.904	0.094	1.897
	Argentina	0.065	1.533	-0.017	-0.454	-0.048	-0.874	0.222	2.109
	Portugal	0.116	2.994	0.060	1.836	0.056	1.700	-0.024	-0.492

med-middle	**overall**	**0.033**	**2.504**	**0.018**	**1.591**	**-0.003**	**-0.257**	**0.015**	**0.900**
med-large	Korea	0.088	1.304	0.000	-0.001	0.034	0.587	0.042	0.560
	India	0.002	0.071	-0.016	-0.442	0.026	0.668	-0.021	-0.506
	Malaysia	-0.011	-0.392	0.058	1.686	0.060	1.381	-0.029	-0.809
	Taiwan	-0.042	-0.839	-0.089	-2.377	-0.097	-2.767	0.016	0.192
	China	0.138	2.182	0.105	1.702	0.145	2.559	0.145	1.272
	Indonesia	0.093	1.023	0.043	0.769	0.047	0.568	0.177	1.013
	South Africa	-0.037	-1.016	-0.067	-1.842	-0.081	-2.007	0.135	1.887
	Thailand	-0.076	-1.854	-0.079	-1.619	-0.123	-2.209	-0.030	-0.222
	Greece	-0.092	-2.065	-0.099	-3.335	-0.029	-0.510	0.159	
	Turkey	0.159	2.265	0.215	2.743	-0.021	-0.437	0.056	0.912
	Philippine	-0.012	-0.123	-0.011	-0.245	-0.041	-0.777	-0.171	-1.682
	Pakistan	-0.149	-3.276	-0.044	-1.118	-0.056	-1.074	0.050	0.617
	Chile	0.151	3.592	0.076	1.734	-0.130	-3.961	0.188	3.992
	Sri Lanka	-0.038	-0.886	-0.147	-4.346	-0.177	-5.887	0.121	2.021
	Argentina	-0.059	-1.012	0.074	1.410	-0.108	-2.449	0.235	3.259
	Portugal	0.012	0.337	0.003	0.121	0.033	0.846	0.040	0.325
med-large	**overall**	**0.027**	**1.767**	**0.009**	**0.763**	**-0.027**	**-1.961**	**0.054**	**2.317**
high-small	Korea	-0.051	-1.874	0.018	0.467	0.035	0.627	-0.088	-1.519
	India	0.022	0.714	-0.023	-0.777	-0.066	-1.671	0.125	3.191
	Malaysia	0.036	1.484	0.065	2.385	0.001	0.015	-0.021	-0.523
	Taiwan	0.075	1.428	0.024	0.449	-0.013	-0.217	0.305	1.439
	China	0.080	1.849	0.055	1.250	-0.040	-0.811	0.110	1.142
	Indonesia	0.194	1.761	0.109	1.504	0.014	0.235	-0.209	-1.897
	South Africa	0.065	1.740	0.019	0.562	0.013	0.296	0.065	1.039
	Thailand	-0.125	-3.211	-0.073	-1.850	-0.077	-1.602	0.155	1.021
	Greece	0.032	0.594	0.050	0.768	0.002	0.015		
	Turkey	0.000	-0.006	0.086	1.629	0.052	0.791	0.053	0.839
	Philippine	-0.043	-0.793	-0.045	-0.780	-0.029	-0.299	-0.242	-0.988
	Pakistan	0.046	0.720	-0.014	-0.249	-0.137	-2.332	0.637	
	Chile	0.060	1.653	0.012	0.441	-0.003	-0.091	-0.032	-0.634
	Sri Lanka	-0.008	-0.210	-0.047	-1.246	-0.055	-1.231	-0.103	-1.443
	Argentina	-0.010	-0.184	-0.025	-0.476	-0.064	-1.022		
	Portugal	0.170	2.542	0.042	1.199	-0.031	-0.814	0.643	1.675
high-small	**overall**	**0.021**	**1.768**	**0.020**	**1.683**	**-0.011**	**-0.712**	**0.009**	**0.385**
high-middle	Korea	0.020	0.496	0.052	1.072	0.009	0.248	0.031	1.166
	India	0.021	0.653	0.024	0.711	-0.003	-0.081	0.023	0.704
	Malaysia	0.072	2.064	0.092	3.167	0.005	0.120	0.080	1.202
	Taiwan	0.072	1.612	0.081	1.576	-0.011	-0.225	0.157	1.388
	China	-0.038	-0.831	0.087	1.831	0.168	2.941	-0.193	-2.108
	Indonesia	0.041	0.626	0.064	1.146	0.083	1.057	-0.106	-1.941
	South Africa	0.032	0.976	-0.063	-2.141	-0.098	-1.983	0.117	2.072
	Thailand	-0.045	-0.973	0.015	0.261	-0.027	-0.577	-0.025	-0.351
	Greece	0.128	2.514	0.018	0.370	0.059	1.066	0.213	1.222
	Turkey	0.107	2.018	0.165	2.208	0.076	1.320	-0.013	-0.217
	Philippine	0.081	1.944	0.011	0.228	0.078	0.882	-0.415	-1.935
	Pakistan	0.031	0.602	0.034	0.938	-0.150	-2.888	0.502	1.316
	Chile	0.013	0.512	0.009	0.328	-0.041	-1.589	0.072	2.126
	Sri Lanka	-0.056	-1.707	-0.020	-0.627	-0.054	-1.538	0.056	1.671
	Argentina	0.044	1.317	-0.030	-0.801	-0.049	-1.357	-0.091	-1.197

	Portugal	0.163	5.332	0.065	2.160	-0.014	-0.315	0.278	3.396
high-middle	**overall**	**0.042**	**3.791**	**0.043**	**3.592**	**0.006**	**0.480**	**0.022**	**1.300**
high-large	Korea	0.015	0.396	0.048	1.076	0.066	1.446	-0.036	-1.117
	India	0.105	2.675	-0.029	-0.804	-0.075	-2.552	0.151	3.691
	Malaysia	0.084	1.716	0.031	0.975	0.018	0.450	0.068	0.860
	Taiwan	0.052	0.861	-0.012	-0.294	0.044	0.802	-0.011	-0.103
	China	0.094	1.208	0.039	0.773	-0.065	-1.880	-0.060	-0.681
	Indonesia	0.140	1.884	-0.022	-0.464	-0.033	-0.520	-0.064	-0.727
	South Africa	0.101	2.098	0.090	1.842	0.072	1.768	0.026	0.382
	Thailand	0.013	0.198	0.017	0.308	-0.032	-0.500	0.033	0.277
	Greece	0.008	0.177	-0.004	-0.077	0.169	0.958	0.405	
	Turkey	0.099	1.651	0.103	1.610	0.225	2.665	-0.132	-1.707
	Philippine	0.075	2.007	0.115	1.560	0.038	0.446	-0.277	-1.475
	Pakistan	0.018	0.233	-0.088	-1.910	-0.101	-1.397	0.055	0.272
	Chile	-0.014	-0.509	-0.033	-1.074	-0.072	-2.284	0.015	0.380
	Sri Lanka	-0.115	-3.977	-0.059	-1.925	-0.040	-0.707	0.080	1.330
	Argentina	0.098	2.335	0.029	0.517	-0.001	-0.008	0.035	0.333
	Portugal	0.045	1.315	0.055	1.244	0.036	0.867	-0.030	-0.250
high-large	**overall**	**0.056**	**4.188**	**0.018**	**1.513**	**0.015**	**0.959**	**0.001**	**0.067**

Table 13

Relation between Size/Coverage/Change/Dispersion and Serial Correlation of Stock Return

In any given month, we regress serial correlation of 6-month return on size, coverage, change in analyst coverage, and forecast dispersion respectively.

Model 1: SCORR = SIZE

Model 2: SCORR =COV;

Model 3: SCORR =CHANGE;

Model 4: SCORR =DISP;

Specifically, at each month t, we get SCORR by computing the serial correlation of 6-month return using return data from month t to t+36. In particular, the serial correlation of 6-month return at month t is calculated by running regression of return(t-12, t-7) on return(t-6, t-1);

SIZE is log(market capitalization at month t-6); COV is the log(1+6_month analyst coverage at month t-6). In particular, 6_month analyst coverage at month t-6 is the number of analyst following from month t-12 to t-7. CHANGE is the change in 6_month analyst coverage calculated at month t-6, i.e., difference between the number of analyst following from month t-12 to t-7 and the number of analyst following from month t-18 to t-13. DISP is the 6-month dispersion of forecast at month t-6, i.e. the standard deviation of forecasts made in period t-12 to t-7 scaled by mean forecasts made in the same period.

Panel A of this table reports the Fama-MacBeth(1973) time-series average of coefficients and the coefficients of pooled regressions with year dummy for each country. Panel B reports the results for the entire sample of pooled 16 countries' data.

Panel A: Within Each Market

Method 1: Fama-Macbeth Coefficients and T-values

country	size		coverage		change		dispersion	
	coefficient	t	coefficient	t	coefficient	t	coefficient	t
Korea	-0.004	-1.288	0.004	1.452	0.004	1.408	0.016	1.405
India	-0.018	-5.121	-0.019	-2.794	-0.002	-0.466	0.032	0.523
Malaysia	-0.058	-9.269	-0.035	-12.543	0.000	-0.118	-0.016	-0.649
Taiwan	0.037	7.781	0.021	2.975	0.021	2.541	0.077	2.626
China	0.014	2.226	0.050	5.745	0.022	2.687	0.155	3.900
Indonesia	-0.015	-2.556	-0.014	-1.589	0.009	1.446	-0.737	-1.599
South Africa	-0.067	-12.228	0.055	6.875	0.003	0.408	0.257	4.336
Thailand	0.032	5.611	0.016	2.226	0.007	0.697	0.145	3.468
Greece	-0.040	-7.061	-0.010	-1.204	-0.017	-1.769	-0.710	-4.388
Turkey	0.019	3.434	-0.003	-0.991	-0.006	-1.843	-0.031	-2.050
Philippine	-0.017	-3.502	-0.021	-2.051	0.001	0.152	-0.124	-2.701
Pakistan	0.006	1.444	-0.002	-0.188	-0.012	-1.552	0.797	1.242
Chile	0.005	1.000	0.028	6.913	-0.004	-0.793	0.604	4.089
Sri Lanka	-0.053	-6.323	-0.016	-1.410	-0.019	-1.556	0.065	1.737
Argentina	-0.011	-2.313	0.039	5.600	-0.013	-2.478	0.248	5.390
Portugal	-0.022	-3.098	-0.029	-2.184	0.025	2.700	0.137	0.592

Method 2: Pooled Regression with Year Dummy

country	size		coverage		change		dispersion	
	coefficient	t	coefficient	t	coefficient	t	coefficient	t
Korea	0.006	2.728	0.006	1.925	0.000	-0.161	0.000	0.456
India	-0.013	-5.579	-0.005	-1.342	0.003	1.210	0.009	1.244
Malaysia	-0.034	-12.453	-0.025	-7.561	0.005	2.585	0.009	3.062
Taiwan	0.046	18.802	0.017	2.936	0.026	6.116	-0.001	-0.326
China	0.002	0.523	0.038	5.589	0.009	2.464	0.017	1.836
Indonesia	0.012	3.697	0.002	0.501	0.016	6.840	-0.001	-0.795
South Africa	-0.055	-8.767	0.054	7.284	0.024	4.151	0.000	0.795
Thailand	0.021	5.556	-0.003	-0.484	-0.014	-4.082	0.000	0.205

Greece	-0.039	-9.491	-0.028	-2.790	-0.001	-0.163	-0.006	-0.363
Turkey	0.006	2.042	-0.011	-2.512	0.001	0.234	-0.002	-0.323
Philippine	-0.020	-5.950	-0.020	-3.454	-0.001	-0.175	-0.044	-4.492
Pakistan	0.003	0.954	0.003	0.372	0.010	1.730	0.002	0.511
Chile	-0.004	-0.776	0.034	5.587	-0.002	-0.521	0.008	2.025
Sri Lanka	-0.051	-7.828	0.003	0.334	-0.004	-0.641	0.019	1.338
Argentina	-0.018	-3.798	0.071	10.391	-0.008	-2.165	0.066	6.860
Portugal	-0.028	-3.434	-0.048	-3.052	0.024	2.520	-0.029	-3.861
Panel B: Entire Sample								
Method 1: Fama-Macbeth Coefficients and T-values								
year	size		coverage		change		dispersion	
	coefficient	t	coefficient	t	coefficient	t	coefficient	t
1990	-0.058	-21.073	-0.070	-21.768	-0.030	-5.509	-0.041	-0.926
1991	-0.047	-6.376	-0.030	-11.093	-0.003	-1.122	0.053	2.527
1992	-0.010	-3.047	-0.011	-1.927	0.010	4.031	0.000	-0.018
1993	-0.021	-14.111	-0.021	-9.672	0.004	1.534	0.002	0.205
1994	-0.016	-1.734	-0.040	-5.793	0.033	7.057	-0.012	-2.621
1995	0.014	4.689	-0.013	-3.758	-0.001	-0.191	-0.009	-2.932
1996	0.021	6.947	0.017	5.273	0.000	-0.061	0.023	2.365
1997	0.020	42.741	0.024	4.254	0.000	0.007	0.007	0.913
1998	-0.010	-2.278	0.021	30.665	0.002	1.246	0.016	2.571
1999	0.008	1.133	0.017	3.941	0.006	2.176	0.012	2.896
overall	-0.010	-3.454	-0.011	-3.606	0.002	1.242	0.005	0.960
Method 2: Pooled Regression with Year Dummy								
pooled reg	-0.003	-4.031	0.006	4.383	0.006	6.860	0.000	1.333