Do local analysts know more? A cross-country study of the performance of local analysts and foreign analysts

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Abstract

This paper examines whether analysts resident in a country make more precise earnings forecasts for firms in that country than non-resident analysts. Using a sample of 32 countries, we find an economically and statistically significant local analyst advantage even after controlling for firm and analyst characteristics. The local advantage is high in countries where earnings are smoothed more, less information is disclosed by firms, and firm idiosyncratic information explains a smaller fraction of stock returns. It is negatively related to whether a firm has foreign assets and to market participation by foreign investors and by institutions, and positively related to holdings by insiders. The extent to which U.S. investors underweight a country's stocks is positively related to that country's local analyst advantage.

1. Introduction

Does distance reduce the quality of the information investors have? A large literature investigates the role of distance in investors' portfolio decisions and investment performance. The largest segment of this literature focuses on investors who are separated by borders, but a growing segment investigates the role of distance within countries. Some of the literature concludes that local investors have an advantage. In the international finance literature, it is often believed that at least part of the "home bias" can be accounted for by the information advantage of local investors. The home bias of foreign investors towards a country is the extent to which they underweight that country in their portfolio relative to that country's weight in the float world market portfolio (for reviews of the literature, see Lewis, 1999; Karolyi and Stulz, 2003). However, some papers find that foreign investors are better informed than local investors. In contrast to most studies, which focus on investor choices and performance, we investigate whether distance affects the quality of information possessed by analysts. In the U.S., analysts who are closer to the headquarters of a firm have an information advantage (Malloy, 2005). Similarly, we find that local analysts have a significant information advantage over foreign analysts in a large sample of countries.

We investigate the relation between the precision of earnings forecasts by local and foreign analysts in 32 countries over the period 2001 through 2003. We define a local analyst as an analyst whose country location is the same as that of the concerned firm, regardless of whether the analyst is working for a local research firm or a research firm from a foreign country. Our main measure of accuracy for an analyst is the price-scaled absolute forecast error of that analyst minus the average price-scaled absolute forecast error across analysts for the earnings forecasted. We define local analyst advantage as the difference between the accuracy of local analysts and the accuracy of foreign analysts. If local analysts have better information, they should predict earnings with more precision. We find that this is the case for univariate comparisons and also when we control for various determinants of forecast accuracy. The difference in the average forecast error in univariate comparisons between local and foreign analysts corresponds to 7.8% of the average price-scaled forecast error. When we control for various determinants of the forecast error, the local advantage falls slightly in most cases. The economic magnitude of the local advantage is 2.3 cents per share, similar to the magnitude of the local analyst advantage in the U.S. (Malloy, 2005).

A plausible explanation for the local advantage is that local analysts have better access to information because they can talk to firm representatives in person and observe what goes on in firms directly. For instance, if a firm is unusually busy, analysts might observe lots of trucks being loaded. Alternatively, they might talk to employees, customers, and competitors. We find strong evidence that the local advantage is driven by distance effects. First, many analysts follow both local and foreign stocks. A powerful test of whether location matters is to investigate whether such analysts have a lower forecast error for local stocks. We find that this is the case. Second, our dataset makes it possible to investigate whether the advantage of local analysts arises because they belong to local brokerage houses that have established relationships with the local firms they follow or because local analysts are located close to the firms they follow. We separately consider local analysts belonging to local firms and local analysts belonging to foreign firms and find no significant difference between the two groups of analysts in 24 countries. Finally, some analysts change location during our sample period. We find that foreign analysts who become local analysts experience an increase in precision. However, local analysts who become foreign analysts do not lose precision – possibly because they do not lose the information they acquired when they were local.

There is considerable variation in the magnitude of the advantage of local analysts. Out of 32 countries, the estimate of the advantage of local analysts is positive in 26 countries and significantly positive in ten countries. We use this cross-country variation to investigate why local analysts have an advantage. If the local advantage is location driven, we would expect that the local advantage is inversely related to the quality of the information put forward by the firm and to whether the firm has international operations, since foreign analysts might be in a better position to evaluate these operations than local analysts. We indeed find that the local advantage is lower for firms with foreign assets. Using the S&P Transparency and Disclosure index, we find a smaller local analyst advantage for firms that have an index value above the sample median. Similarly, the local analyst advantage is significantly lower in countries with above-median accounting transparency. There is no local analyst advantage in countries where earnings management is less prevalent. Further, the local advantage is significantly lower in countries where stock returns incorporate more idiosyncratic information. More precisely, the local advantage is strong in countries where the aggregate stock market return has greater explanatory power for individual stock returns as measured by the R^2 measure of Morck, Yeung, and Yu (2000).

The local advantage is closely tied to the quality of disclosure. More disclosure levels the playing field for analysts. Generally, though, countries with poor disclosure are also countries with weaker investor protection and poorer financial and economic development. We find that measures of financial development are not associated with the local advantage. Foreign analysts typically belong to firms from developed countries, so that they might have an advantage in resources and training when competing with local analysts in countries with poor economic development. However, the local advantage of analysts is not significantly different in less developed countries. Measures of investor rights unrelated to enforcement do not seem to affect the advantage of local analysts.

Our maintained hypothesis is that the local advantage is the outcome of location-induced information asymmetries that cause foreign investors and analysts to have less information than local investors and analysts. The evidence summarized so far is supportive of that hypothesis. However, an alternative explanation for the local advantage is that it is caused by a lower demand for analyst services by foreign investors because of the home bias. As Healy and Palepu (2001) emphasize, there is both a demand and a supply for analyst services. Everything else equal, the demand for analyst services from foreign investors will be lower in countries where foreign ownership is smaller and where foreign capital flows are lower. When the demand for analyst services from foreign investors is lower, we would expect fewer resources to be allocated to the provision of analyst services by foreign brokerages, and the better analysts would choose to be local analysts. As a result, there could be an endogenously determined local advantage that is not caused by location-induced information asymmetries. With this alternative explanation, a home bias towards a country could give rise to a local analyst advantage in that country even if location-induced information asymmetries do not affect the performance of foreign analysts. Though the local advantage does not appear to be explained by the home bias, we find some evidence that the local bias is lower for more open countries. The evidence on the openness measure is consistent with the existence of a demand effect that is unrelated to location-induced information asymmetries. Presumably, resources devoted to the provision of analyst services for foreign investors increase with the number of analysts covering a stock. However, we find that the local advantage in a stock is not sensitive to the ratio of foreign analysts to local analysts covering that stock. Further, while U.S. investors invest more in countries that have a larger weight in the world market portfolio, the local advantage in a country is unrelated to the weight of that country's stocks in the world market portfolio. Finally, we do not find that the local advantage in a country decreases from 2001 to 2003 if U.S. investors increase their investments in that country.

The paper proceeds as follows. In Section 2, we review the existing literature on issues of distance. In Section 3, we introduce our sample. In Section 4, we present our analyst accuracy measures and univariate comparisons of forecasting accuracy. Section 5 establishes the existence of an advantage for local analysts controlling for firm and analyst characteristics. In Section 6, we investigate the determinants of the local analyst advantage. We turn to the relation between the local analyst advantage and the home bias in Section 7. Section 8 presents various robustness checks. We conclude in Section 9.

2. Literature review

It is well known that the portfolios of investors are biased towards their home country. There is now a large literature that attempts to explain this home bias. An important strand of this literature emphasizes differences in information between domestic and foreign investors. Early papers with this focus include Gehrig (1993) and Kang and Stulz (1997). The assumption that foreign investors are less well informed is taken as given by Brennan and Cao (1997) in a well-known article that focuses on the implications of this assumption for equity flows. A number of papers attempt to identify more directly whether foreign investors have an information disadvantage, with mixed results. Hau (2001) investigates trading data for professional traders and shows that local investors perform better than foreign traders. Choe, Kho, and Stulz (2005) and Dvorak (2005) find that foreigners trade at worse prices in Korea and Indonesia, respectively. Grinblatt and Keloharju (2000) and Seasholes (2000) argue that better resources and better access to expertise allow foreign institutions to perform better than domestic institutions. Using daily data for the 16 largest Finnish stocks, Grinblatt and Keloharju (2000) find that over a two-year period foreigners and domestic financial corporations buy more stocks that perform well over the next 120 trading days than domestic individual investors. Seasholes (2000) finds that foreign investors buy (sell) ahead of good (bad) earnings announcements in Taiwan while domestic investors do the opposite. Froot, O'Connell, and Seasholes (2001) and Froot and Ramadorai (2001) use flow data to show that foreign investors have some ability to predict returns. These papers are consistent with better information and greater sophistication on the part of foreign investors. However, Shukla and van Inwegen (1995) show that U.K. money managers underperform American money managers when picking U.S. stocks. Using 18 years of annual data, Kang and Stulz (1997) find no evidence that foreign investors outperform domestic investors in Japan.

More recently, a new literature has developed that looks at the impact of distance on portfolio choice within countries. Coval and Moskowitz (1999), using only U.S. stock returns, provide evidence that investor location matters, in that mutual fund managers overweight the stocks of firms located closer to them. In another paper, Coval and Moskowitz (2001) find that mutual fund managers are better at picking the stocks of firms located closer to where the fund manager than the stocks of firms located farther away. Huberman (2001) finds a local concentration in the ownership of the Baby Bells in the United States. Ivković and Weisbenner (2005) use data from a large discount brokerage house and find the striking result that one out of six U.S. individuals in their sample invests only in companies headquartered within 250 miles from the household. Recent papers show that social networks are important for stock holdings. For instance, Hong, Kubik, and Stein (2005) show that mutual fund managers are more likely to hold a particular stock if other managers in the same city hold the same stock.

A growing number of papers investigates the properties of analyst forecasts across countries. As documented by Chang, Khanna, and Palepu (2000) and others, there is considerable variation across countries in the accuracy of analysts' forecasts. These papers show that country characteristics affect the extent of analyst following and the properties of analyst forecasts. However, these papers seem to provide contradictory results on how the level of investor protection affects analyst accuracy. For instance, while Chang, Khanna, and Palepu (2000) find evidence that a country's legal system helps determine the accuracy of analysts, Ang and Ciccone (2001) reach the opposite conclusion. Hope (2003) finds that the enforcement of accounting standards and firm-level disclosure are important determinants of forecast accuracy.

Only a handful of papers investigate the relation between distance and analyst performance. Malloy (2005) finds evidence that, in the United States, analysts located closer to a firm have more accurate analysis. In an international setting, a country has to be open to foreign investors before foreign analysts take on a substantial interest in that country. Bae, Bailey, and Mao (2006) show that financial opening is followed by increased interest from foreign analysts. Bacmann and Bolliger (2001) examine the relative performance of analysts from local and foreign brokerage houses for seven Latin American stock markets and conclude that foreign analysts outperform local analysts. When they compare the mean difference of forecast errors between local and foreign analysts, it is not significantly positive for their whole sample, but it is significantly positive for Mexico and Colombia. In contrast, Orpurt (2004) finds evidence of a significant local advantage for a sample of seven European countries. In his study, local analysts are analysts resident in a country. Hence, these could be domestic or expatriate analysts. He finds that his results are driven by Germany. Bolliger (2004) focuses on local versus foreign brokerage houses and finds an advantage for local brokerage houses in Europe, although Orpurt (2004) does not find this type of local advantage. Conroy, Fukuda, and Harris (1997) find a local brokerage house advantage in Japan. Finally, Chang (2003) compares the stock recommendations of foreign and expatriate analysts for Taiwanese firms. He finds a local advantage in that expatriate analysts outperform foreign analysts, but he also finds that expatriate analysts outperform local analysts working for domestic firms. This result is consistent with local analysts working for foreign institutions having the advantage of belonging to more sophisticated and resourceful organizations.

3. The sample

Our sample construction begins with the list of firms included in the S&P's Transparency and Disclosure dataset (hereafter TD dataset). There are several advantages to the TD dataset. First, it covers a large sample of firms from over 40 countries, allowing us to examine the relation between country-level characteristics and the local analyst advantage. Second, the sample firms in the TD dataset are larger and better-known firms in each of the sample countries and attract strong interest from international investors and analysts. Thus, to the extent that there is a bias in our sample construction, the bias leads us to understate the local analyst advantage, since this advantage is likely to be less severe for these firms. Finally, the TD dataset provides a comprehensive firm-level transparency and disclosure measure, which allows us to examine the impact of firm-level disclosure practices on the local analyst advantage.[1] The dataset provides objective rankings of the corporate reporting practices for firms included in the S&P Global 1200 index and an additional 400 companies in the Standard & Poor's/IFCI emerging markets index. S&P searches company annual reports and standard regulatory filings for the inclusion of the 98 most common disclosure items. The sample provided to us by S&P in September 2004 covers 894 non-U.S. firms from 40 countries.

For the list of firms included in the TD dataset, we obtain annual earnings per share forecasts as well as actual annual earnings per share from the I/B/E/S International Detail File. We then match (by hand) each analyst's name and brokerage name in the I/B/E/S data with entries from Nelson's Directory of Investment Research, which provides information including analyst's full name and address that allows us to tell whether the location of the company that the analyst covers is different from the location of the analyst. In some rare cases, we have duplicate matches that have exactly the same analyst and broker name. We exclude duplicate matches, although the results are almost identical when we include them in the final sample. Once we match each analyst's name and brokerage name, we obtain the country location of the analyst and the corresponding country location of the firm that the analyst covers. Each volume of

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[1] Doidge, Karolyi, and Stulz (2004), Khanna, Palepu, and Srinivasan (2004), and Durnev and Kim (2005) also use this data source for their measures of firm disclosure and corporate governance.

Nelson's Directory of Investment Research in year t compiles the data using analyst information as of November in year t-1. We therefore classify an analyst's location for year t using information in Nelson's Directory published in year t+1. If the country location of an analyst is the same as that of the firm he covers, we classify the analyst as a local analyst. Otherwise, we classify the analyst as a foreign analyst. Local analysts can be further classified into pure local analysts and expatriate analysts. A pure local analyst is an analyst working for a local research firm, while an expatriate analyst is an analyst working locally for a research firm from a foreign country.

For the matched sample, we impose several restrictions. First, we select the countries where there are more than 50 firms followed by I/B/E/S analysts in the I/B/E/S dataset to ensure that we select the countries that attract a reasonable amount of interest from analysts and international investors. (We drop Colombia, Greece, Pakistan, Peru, Turkey, and Venezuela.) Second, we select the most recent earnings forecast for each analyst covering each firm in each year. Finally, we select only the firms that are followed by both local and foreign analysts for each year and for each firm, so that both groups appear for every firm-year sample. Without this restriction, we could pick up the effect of firm characteristics to the extent that local and foreign analysts follow firms with different characteristics. It is important to note that this restriction implies that, since we are studying the local advantage only for firms that are followed by foreign analysts, our analysis is likely to understate the extent of the local advantage across all firms since one would expect that foreign analysts would stay away from firms where the local advantage is highest. With this restriction, we lose 155 firms. Eight of these firms are only covered by foreign analysts and the rest are only covered by local analysts. Adding these firms to our main regression does not affect our conclusion regarding the existence of a local analyst advantage. We also exclude firms covered by fewer than five analysts to ensure that our forecast accuracy measures are reliable. With this restriction, the number of sample firms is reduced to 576, but the results are unchanged.

Table 1 provides data on our sample. Our S&P TD scores to quantify firm-level information disclosure are based on information as of June 2002. While it seems reasonable to assume that data reported at that time might still describe firm disclosure policies for a few years before, it would be less reasonable to make this assumption going back further in the past. We therefore use 2001-2003 as our sample years. Our final sample contains 2,563 local analysts and 1,920 foreign analysts providing a total of 20,425 annual earnings forecasts on 611 firms from 32 countries. The table shows that, not surprisingly, there is considerable variation across countries in the number of firms in our sample, ranging from two in Austria to 118 in the U.K. The number of local and foreign analysts also varies substantially. While Austria has three local analysts, the U.K. has 690. The variation in the number of foreign analysts is also considerable, with South Africa having 11 foreign analysts and France having 526.

The last column of Table 1 shows that the ratio of the number of foreign analysts to the total number of distinct analysts varies sharply across countries as well. The lowest ratio is 0.12 for Japan and the highest is 0.91 for China. China has 67 foreign analysts in the sample, but only seven local analysts. Only ten countries have a ratio below 0.5. Consequently, in many of our sample countries there are more foreign analysts than local analysts. This could reflect a bias in the coverage of I/B/E/S. However, as long as I/B/E/S does not have a bias against firms or local analysts when local analysts are less precise relative to foreign analysts, this bias should not affect our results. There is no reason to suspect that I/B/E/S might have a bias of this nature.

4. Analyst precision: Univariate comparisons of local, expatriate, and foreign analysts

Forecast accuracy is one of the most important dimensions along which financial analysts and their brokerage houses compete. The extant literature mainly uses four proxies for forecast accuracy and/or forecast error. Unlike studies based on U.S. samples, we do not use absolute forecast error as a dependent variable since our sample includes analyst forecasts made in a variety of currencies. The magnitude of absolute forecast errors in small currency units (such as the Indonesian rupiah) would be much higher than those using large currency units. Also, applying exchange rates to convert all of the forecasts into a single currency would introduce noise in our estimates due to exchange rate fluctuations. To make sure that our results are not sensitive to how we measure forecast accuracy, we use four accuracy variables and follow Clement and Tse (2005) and Malloy (2005) in constructing these variables. Table 2 provides formulas for our forecast accuracy variables as well as definitions of all the variables used in the paper. The forecast accuracy variables are:

Proportional Mean Absolute Forecast Error (pmafe), measured as the difference between the absolute forecast error of analyst i forecasting firm j's fiscal year T earnings and the average absolute forecast error across all analyst forecasts of firm j's fiscal year T earnings, expressed as a fraction of the average absolute forecast error across all analyst forecasts of firm j's fiscal year T earnings. A positive value for this variable indicates that the absolute forecast error of analyst i for firm j's fiscal year T is larger than the average absolute forecast error of all of the forecasts for firm j for the same fiscal year.

Proportional Mean Price-Scaled Absolute Forecast Error (pmafep), measured as above, except that this variable is scaled by the latest monthly stock price available from Compustat. (We obtain similar result when we use monthly stock prices from I/B/E/S summary files.)

De-meaned Absolute Price-Scaled Forecast Error (dafep), measured as the difference between the price-scaled absolute forecast error of analyst i for firm j at time t and the mean price-scaled absolute forecast error by all the analysts for firm j in the same fiscal year T.

Range ($range_{ijt}$), measured as the ratio of the difference between the highest analyst price-scaled absolute forecast error for firm j for fiscal year T and analyst i's price-scaled absolute forecast error for firm j for fiscal year T divided by the range of analyst price-scaled absolute forecast errors for firm j for fiscal year T.

Since the first three dependent variables are forecast error proxies, we multiply each of them by minus one to transform them into forecast accuracy proxies. Consequently, an increase in our dependent variables means that the forecast becomes more precise.

Table 3 provides mean and median values of the accuracy measures. We focus on the first row. The mean of the proportional mean price-scaled absolute forecast error (pmafep) for pure local analysts is obtained as follows. The mean of the average absolute forecast error is 0.0232016. The mean of the average absolute forecast error for pure local analysts is 0.02267. The value of pmafep of 0.023 for pure local analysts is equal to the difference in the average absolute forecast error of pure local analysts and the sample average scaled by the sample average, (0.02267-0.0232016)/0.0232016, multiplied by minus 1. The difference in forecast accuracy between pure local analysts and foreign analysts expressed as a percentage of the sample average absolute forecast error is equal to 0.065 (0.023 – (-0.042)) or 6.5%, while the difference in forecast accuracy between expatriate analysts and foreign analysts is 8.7%. If we multiply 6.5% by the average price-scaled absolute forecast error of 0.0232016 for our final sample and then multiply the result by the average stock price (the average stock price is around US$15 per share for our sample firms), we have a measure of the local advantage in U.S. dollars, which is 6.5% * 0.0232016 * $15 = $0.023. Thus, there would be roughly a $0.023 per share accuracy advantage on average for local analysts relative to foreign analysts. This local advantage in dollars is comparable to the local advantage in the United States of $0.025 reported (Malloy, 2005).

Table 3 shows that, whether we use means or medians, there is never a significant difference in accuracy between pure local analysts and expatriates. For the first three accuracy measures, the pure local analysts and the expatriate analysts are more accurate than the foreign analysts. For the last accuracy measure, however, there is no significant difference between local analysts and foreign analysts whether we use means or medians.

The results of Table 3 suggest that local analysts generally have an advantage over foreign analysts. One should be cautious, however, in interpreting Table 3 because it does not control for forecast horizon and it is well known that forecast horizon is an important determinant of accuracy (see, e.g., Clement, 1999). Further, stale forecasts could lead to large forecast errors that would not be instructive for our study. In the following, we eliminate the worst 1% of forecast errors to ameliorate this problem. While none of our main conclusions are affected by this procedure, some subsidiary results are affected because our estimates are less precise when we include all observations.

We also report data on the experience of analysts with a firm. We measure firm-specific experience as the number of years between the first forecast for the firm by the analyst in the I/B/E/S database and the forecast considered in the analysis. We find that local analysts have more firm-specific experience. On average, local analysts have followed a firm almost half a year longer than foreign analysts. In an era of financial globalization, we would expect more attention to be devoted to firms by foreigners over time. As a result, we have to investigate carefully whether the local analyst advantage is simply due to a difference in experience. While local analysts are more experienced compared to foreign analysts for local firms, foreign analysts have as much experience as local analysts in the analyst profession. We compute the number of years from the first I/B/E/S forecast of an analyst (for any firm, whether in our sample or not) to the current forecast and find that there is no economically significant difference between domestic and foreign analysts. Finally, we measure the forecast horizon. It could be that local analysts have an advantage simply because the forecast we consider is closer to the earnings announcement date. We therefore measure the time period between the forecast and the earnings report date on I/B/E/S. We find that there is no significant difference in forecast horizon between local and foreign analysts.

Information asymmetry varies with firm size. We report mean and median market capitalizations of the firms followed by the three groups of analysts. On average, the average size of the firms followed by local analysts is not different from the average size of the firms followed by foreign analysts, but the median size of firms followed by local analysts is significantly smaller. To the extent that one would expect forecast precision to increase with firm size (Ang and Ciccone (2001) confirm this relation across countries), it follows that the firm size difference, if not controlled for, could lead to the spurious result that foreign analysts have an advantage over local analysts. Another reason that foreign analysts might have an advantage is that they come from much larger organizations. The median number of analysts for the brokerage firm of a pure local analyst is 37, compared to 124 for the brokerage firm of a foreign analyst. However, local analysts benefit from being more specialized. A typical local analyst follows only his or her own country. In contrast, a typical foreign analyst follows firms in three countries. Foreign analysts also follow more industries than local analysts. Foreign analysts are not at a complete disadvantage since they cover fewer firms than local analysts, but they produce more forecasts per firm.

5. Is the local advantage explained by location?

Our hypothesis is that local analysts have better forecasts because they are closer to and hence have better access to information about the firms they follow. In this section, we first estimate the size of the local advantage and test alternative explanations for the local advantage. The most natural alternative hypotheses are that the local advantage is (1) due to firm and analyst characteristics and (2) explained by local connections rather than by distance. We first examine these alternative hypotheses. We then show that the local advantage holds for different subsamples but is stronger in some countries than others. We finally attempt to isolate the source of the local advantage by showing that it is stronger for firms that disclose less.

5. 1. Estimates of the local advantage

To address the hypothesis that the local advantage is the result of firm and analyst differences rather than the result of a location advantage, we estimate in Table 4 multiple regressions that control for firm and analyst characteristics. The regression t-statistics take into account firm-level clustering. (We examine regressions taking into account country-level clustering and find similar results.) We also de-mean all our independent variables by the firm/year averages to reduce heteroskedasticity, with the exception of firm size which is constant across analysts for each firm/year. In regression (1), we regress the proportional mean price-scaled absolute forecast error, multiplied by -1, on the number of analysts from the analyst's brokerage firm, the forecast horizon, the number of industries the analyst covers, and the logarithm of the firm's equity market capitalization. We expect precision to be higher if an analyst comes from a larger firm and to be lower if the forecast horizon is longer if the analyst covers more industries, and if the firm is smaller. The variables that are significant are the horizon and firm size.

We find that a longer horizon reduces accuracy substantially and that an increase in firm size increases accuracy.

In regression (2), we add a dummy variable for local analysts. This dummy variable is highly significant. In the third regression, we add variables for the firm-specific experience of the analyst and career experience. Consistent with Jacob, Lys and Neale (1999), Hong, Kubik, and Solomon (2000), and Bolliger (2004), there is no general learning effect after we control for firm-specific experience. While analysts with more firm-specific experience are more accurate, analysts with more career experience are less accurate. It could be that an analyst with more general experience covers more firms and devotes fewer resources to each covered firm. Controlling for these analyst characteristics does not affect our estimate of the local analyst advantage. Even when we control for various determinants of forecast accuracy, the average forecast accuracy of local analysts still exceeds the average forecast accuracy of foreign analysts by 4.72% of the average absolute forecast error.

An obvious concern is that our attempt to control for the difference in forecast horizon using the forecast horizon as a control variable is insufficient and that our results are due to differences in forecast horizon. To address this concern, we construct a sample of matched forecasts. We match each foreign forecast for a firm to the local forecast for the same fiscal year that immediately precedes it in time. With this sample, the average precision for foreign analysts is 0.031. In contrast, the average precision for local analysts is 0.069, significantly higher than the precision of foreign analysts with a p-value of 0.02. The median precision of local analysts is also significantly higher than the median precision of foreign analysts. With this matched sample, the forecast horizon of foreign analysts has a significantly lower mean and a significantly lower median than the forecast horizon of local analysts. We then estimate regression (3) on this sample. Regression (4) shows that for this matched sample the local analyst advantage is higher than for the overall sample.

To allow for the possibility that unobserved firm effects could explain our results, we estimate regression (3) using firm fixed effects. With firm fixed effects, the estimate of the local advantage in regression (5) is 0.063 with a t-statistic of 5.04. While not reported in the table, we also estimate regression (3) using firm random effects and find a significant local analyst advantage with a t-statistic of 4.44. Consequently, our results are robust to allowing for fixed and random effects.

Our basic premise is that distance affects analyst performance. In an unreported regression, we replace the dummy for local analysts with the log of geographic distance in thousands of kilometers between the home country of the firm's headquarters are located and the country in which the analyst is located. This variable is significantly negative. It turns out that the correlation between the dummy for local analysts and the distance variable is -0.98. We further examine the impact of distance by differentiating foreign analysts who are on the same continent as the firms they analyze and foreign analysts who are on different continents. If distance matters to the processing of information, we would expect regional foreign analysts to be more accurate than foreign analysts who are outside of the region. In regression (6), we add a dummy variable for regional foreign analysts and find that their forecasts are more precise than the forecasts of foreign analysts from other continents.

In regression (7) we consider separately the advantage of pure local analysts and expatriate analysts. Expatriate analysts are those analysts who work locally for foreign firms. One possible explanation for the local advantage is that local analysts have better connections, which facilitate access to information. For instance, the firm they work for could have a relationship with the firm they follow. If the local advantage is explained by connections, we would expect this advantage to be higher for pure local analysts than for expatriate analysts. There is no difference in the estimate of the advantage for these two types of analysts. We estimate the difference between the two types of analysts at both the country level and the continent level. At the continent level, we find no difference between local and expatriate analysts in Europe and Asia, but expatriate analysts do not have a local advantage in Latin America. At the country level, there are only five countries where the performance of expatriate analysts is significantly different from the performance of pure local analysts. In Australia and Korea, expatriate analysts perform better than pure local analysts; in Brazil, Singapore, and Spain, the result is the opposite. Consequently, in the following we focus only on local analysts and do not make a distinction between pure local and expatriate analysts.

A more direct approach to control for analyst differences would be to examine the performance of an analyst as his location changes or when he follows stocks that differ by their location. In regression (8), we estimate our regressions with analyst fixed effects. The fixed effect is identified because we have 1,001 analysts in our sample who follow both local and foreign stocks. Strikingly, we find that an analyst who follows local and foreign stocks is better at following local stocks. Some analysts move during our sample period: 28 foreign analysts become local analysts, covering 67 firms, and 31 local analysts become foreign analysts, covering 73 firms. In regression (9), we estimate the impact of becoming a local analyst on analyst performance by adding to regression (2) a dummy variable for analysts who have become local analysts after having been foreign analysts in our sample. We find that the forecasts of these analysts become more precise. Similarly, in regression (10) we estimate the impact on analyst performance of becoming foreign analysts during our sample period by adding to regression (2) a dummy variable for analysts who become foreign. This change in location does not affect the performance of analysts. A plausible explanation is that it takes time for an analyst to lose information acquired locally.

In unreported regressions, we add additional firm and analyst characteristics. First, following Lang, Lins, and Miller (2004), we add the yearly earnings-return correlation and the earnings surprise, defined as the difference between the current-year and previous-year earnings per share scaled by the stock price. Second, we add the number of analysts following the firm. Third, we add a dummy variable for membership on consensus all-star research teams of Institutional Investor and Extel. Finally, we add the R^2 of a market model regression of the return of the firm on the return of the world market portfolio. The local advantage is robust to the inclusion of these additional variables.

5. 2. The local advantage across time and across countries

In Table 5, we estimate regression (3) of Table 4 on subsamples. First, we split the sample between forecasts made after the fiscal year-end and those made before. This is an important distinction in that access to insiders would make the largest difference in precision for forecasts made after the fiscal year-end. After the fiscal year-end, insiders will have a very good sense of how the numbers will look. If they tip off their favorite analysts, these analysts should have a substantial advantage in precision. We find that there is a local advantage for both subsamples. However, the point estimate of the local advantage is higher (but not significantly so) for forecasts made after the year-end.

Table 5 also distinguishes between forecasts made in separate years. We find that the local advantage is significant in 2001 and 2002 at the 5% level and in 2003 at the 10% level. The local advantage is stronger in years when firms have poorer earnings than financial analysts expect. To account for the optimism bias of analysts, we define a negative earnings surprise as earnings that are 10% or more below the consensus estimate. In 2001 and 2002, 46% and 47% of the earnings surprises are negative, respectively. In 2003, only 38% of the earnings surprises are negative. This raises the issue of whether the local advantage is stronger for firms with negative earnings surprises. There is evidence in the literature that bad news "travels slowly" (Hong, Lim, and Stein, 2000) and hence that the local advantage could be relatively more important in assessing the performance of poorly performing firms. We estimate a regression allowing the local advantage to differ for negative and non-negative earnings surprises and find that the local advantage is significantly higher for negative earnings surprises, but there is a significant local advantage for non-negative earnings surprises as well.

The second panel of Table 5 reports estimates of the local advantage per country. There is substantial variation in the number of observations across countries, so it is not surprising that the precision of the estimates varies across countries. Nevertheless, the estimate for the local advantage is positive in all countries but six. There is no country where the local advantage is significantly negative, but the local advantage is significantly positive in ten countries at the 10% level or better. As discussed earlier, Bacmann and Bolliger (2001) find that the local advantage (using our language) is significantly negative in Mexico and Colombia. Consistent with their results, Mexico is the country in our sample where the local advantage is the lowest – it is negative with a t-statistic of -1.58.

Though we do not reproduce the results in a table, we aggregate the country results by continents and find that the local advantage is significant for Asia and Europe, but not for Latin America. In Latin America, however, the problem is that expatriate analysts have no advantage – pure local analysts have a large advantage over both expatriate analysts and foreign analysts (the local advantage for pure local analysts in Latin America is 0.149). Few European countries have a significant local advantage. The local advantage in Asia is more than twice local advantage in Europe or in Latin America. China and Indonesia have a strong local advantage, but their local analysts in our sample are expatriates.

5. 3. Where does the local advantage come from?

We have established that the local advantage is robust to controlling for various analyst characteristic variables. We now investigate whether the size of the local analyst advantage depends on the information environment of the firm. In other words, are local analysts better for firms where information asymmetries are greater? If so, then an important component of the local advantage would be the ability of local analysts to obtain information that is not readily available to analysts outside the country.

We use four different proxies for the firm's information environment. The first regression in Table 6 uses the Transparency and Disclosure score (TD score) of firms as a measure of the information environment. Firms with a higher score release more information. We would therefore expect the local advantage to decline with the TD score. We construct a dummy variable that takes value one if the TD score of the firm is above the median score of our sample firms and then create an interaction variable with the dummy for local analysts. A significant negative coefficient on the interaction dummy means that an increase in the transparency level is associated with a lower local advantage. We find that the transparency level itself does not affect the precision of forecasts. However, it significantly affects the local advantage. The local advantage of the more transparent firms is lower by 0.037 than the local advantage of the other firms, so that the local analyst advantage roughly drops in half from a less transparent firm to a more transparent firm.

The next regression in Table 6 contrasts the local advantage for purely domestic firms and for firms that are cross-listed in the United States; the latter firms have a more transparent information environment,[2] and they are also subject to many U.S. laws and regulations that protect investors (see Doidge, Karolyi, and Stulz, 2004). Lang, Lins, and Miller (2004) document that cross-listings are associated with an increase in analyst forecast precision. Our evidence is consistent with theirs. In addition, however, we find that cross-listing sharply reduces the local advantage from 0.067 for a purely domestic firm to 0.029. Nevertheless, the local advantage is still significant for cross-listed firms.

We next investigate in Table 6 whether the local advantage is related to the number of analysts who follow a firm. If a firm is followed by more analysts, more information should be generated about that firm and foreign analysts could take advantage of it. We construct a dummy variable that takes the value one if a firm has more than the median number of analysts following it. This dummy variable is not significant by itself or when interacted with the local dummy variable. The number of analysts and size are positively correlated. In unreported regressions, we find that the number of analysts is significant when we do not control for size, but its interaction is not.

We attribute the advantage of local analysts to the fact that they have access to information that is not available to foreign analysts. We would thus expect the advantage of local analysts to be lower when the firm has international activities since foreign analysts might be closer to these activities. We test this prediction in the last regression of Table 6 by adding a dummy variable for firms that report foreign assets in Worldscope. As expected, the local advantage for these firms is significantly lower than for other firms. In unreported regressions, we use two other proxies for international activities: the first proxy is a measure of overseas sales as a fraction of total sales and the second proxy is a measure of exports as a fraction of total sales. When we interact these proxies with the local advantage, the interaction is insignificant for both proxies.

The results for ADR firms and for firms with above-median foreign assets are consistent with the existence of location-induced information asymmetries. However, there is also evidence that foreign investors are more interested in firms with ADR programs and/or more foreign assets (see Ammer,

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[2] Bailey, Karolyi, and Salva (2006) investigate the impact of cross-listings on the informational environment of firms. Bae, Bailey, and Mao (2006) also investigate the impact of country-wide liberalizations or increased openness of local markets to global markets on the information environment of firms.

Holland, Smith, and Warnock, 2006). Consequently, our results could be attributable to the fact that the variables we use are proxies for greater demand for analyst services.

It could also be the case that foreign analysts are as accurate as local analysts but are simply more biased. To investigate this possibility, we estimate an optimism measure that takes a value of one if a forecast exceeds the actual earnings and zero otherwise. The median value of this optimism variable is 0.5 for both domestic and foreign analysts. Though the mean of the variable is slightly higher for foreign analysts than for domestic analysts (0.505 versus 0.487), the difference has a p-value of 0.24. It follows that differences in optimism cannot explain the local advantage. We also estimate the mean signed forecast error across both groups of analysts but it is not significantly different from zero. Finally, we investigate whether foreign analysts have more heterogeneous forecasts than local analysts which might mean that foreign analyst forecasts are more likely to be stale. However, we find no evidence of a difference in forecast heterogeneity between foreign and local analysts.

6. Do country characteristics help explain the local analyst advantage?

There is a robust local advantage that is strongly related the firms' information environment, which differs across countries. We would therefore expect the local advantage to differ across countries. But there are other reasons for the information advantage to differ across countries. In Table 7, we explore the relation between the local analyst advantage and a large number of country characteristics that we would expect a priori to influence the local advantage. The regressions in Table 7 have the control variables from Table 5, but we do not report the estimates for the coefficients on these variables. We focus on the interaction of the local analyst dummy variable with the country characteristic of interest. A significant positive coefficient on the interaction means that an increase in the country characteristics is associated with a higher local advantage. In all regressions, we construct a dummy variable that takes a value of one if the value of the country characteristic variable (other than binary variables) is above the median value of our sample countries and then interact that variable with the local analyst dummy (except for the anti-director rights index where we choose firms with an index of 4 or above).

In the first regression, we investigate the language barrier. Foreign analysts are likely to be fluent in English. We would expect them to be at a disadvantage with regard to firms in countries where English is not the main language. We use the CIA World Factbook to identify countries where English is the official language. The local advantage is weaker in countries where English is the official language. While the coefficient on the interacted variable is negative, it is insignificant.

We then turn to measures of economic and financial development. The first measure is GDP per capita. There is weak evidence (p-value of 0.102) that the local advantage is less in high-GDP countries. Next, we divide the countries into developed and developing countries using the Standard & Poor's Global Stock Markets Factbook for 2004. Whether a country is developed or not plays no role in the local advantage, nor does the development of the equity market affect the local advantage significantly. We would expect financial markets to be less developed if state ownership in the financial sector is more important. We use a dummy variable that takes the value one if state ownership of banks in a country is higher than for the median, using data from Barth, Caprio, and Levine (2004). The interaction has a significant positive coefficient. Finally, we use a measure of openness of the financial sector. From the same data source, we construct a variable that takes a value equal to one if foreign ownership of banks exceeds the median. This variable does not help explain the local advantage. Except for state bank ownership, none of our economic and financial development variables are statistically significant. Nevertheless, some of the coefficients imply that greater economic and financial development might be associated with an economically significant reduction in the local advantage.

Dahlquist, Pinkowitz, Stulz, and Williamson (2003) point out that portfolio investors can only hold the shares not held by corporate insiders. Consequently, foreign investors have a lower demand for analyst services for stocks in countries where insiders have a larger proportional stake. In addition, high ownership by corporate insiders can be the outcome of poor investor protection. We use next a dummy variable that takes the value one if the average ownership of the three largest shareholders for the ten largest non-financial domestic private firms in a country is above the median of the sample countries using data from La Porta, Lopez-de-Silanes, and Shleifer (1999). The interaction with this dummy variable is significant and has a positive coefficient.

The supply of analyst services should increase with the importance of institutional investors in an economy since these services are primarily directed towards institutional investors. We find that the precision of analyst forecasts is significantly higher in countries where the ratio of assets in so-called pooled investment schemes to GDP, as measured by Beck, Demirguc-Kunt, and Levine (1999), exceeds the median in our sample. At the same time, the local advantage is significantly lower in these countries.

Regressions (9) through (14) control for proxies for investor rights, respect for property rights, and enforcement. There is no clear prediction as to whether protection of investor rights and of property rights increases the local advantage or reduces it. While poor investor protection is expected to increase the local advantage through several channels, there are also channels through which it could reduce it. With poor protection of property rights, transparency and good governance can be costly for firms (see Stulz, 2005). One would expect local analysts to have an advantage when firms are less transparent. Poor protection of property rights also affects foreign investors more because they are typically easier to expropriate, so that their holdings are smaller. With poor investor protection, an important determinant of reported earnings is the extent to which insiders can affect firm value adversely by expropriating minority shareholders and other investors ("tunneling"). One would expect local analysts to have an advantage in ferreting out tunneling by being on the spot. At the same time, however, it is also possible that local analysts are less independent than foreign analysts in countries where protection of investor rights is weak, in which case foreign analysts might provide more accurate forecasts than local analysts.

Our first proxy for investor protection is the legal origin variable from La Porta, Lopez-de-Silanes, Shleifer, and Vishny (LLSV, 1998). Using a dummy variable that takes the value zero for common law countries and one for other countries, we find that there is no relation between legal origin and the local advantage in that the interaction between the local dummy and the legal origin dummy is insignificant. The next regression uses the anti-director rights index of Djankov, La Porta, Lopez-de-Silanes, and Shleifer (2005). The coefficient on the interaction is not significant. In regression (11), we use a dummy variable that takes the value one if the index of the respect for property rights from LLSV (1998) is above the median in our sample. The interaction has the expected sign and is significant. La Porta, Lopez-de-Silanes, and Shleifer (2006) use an index of public enforcement. We construct a dummy variable that gives a value of one to countries with an above-median value of this index. The interaction with this dummy variable is not significant. It is worth noting, however, that the economic significance of the interactions with the property and public enforcement dummy variables is substantial since the interaction seems to cut the local advantage in half. The final proxy for investor rights is a dummy variable that takes the value one if class actions are available in a prospectus liability case. We use data from La Porta, Lopez-de-Silanes, and Shleifer (2006). The interaction is significant and negative. The magnitude of the estimate on the interaction term is also economically large enough to cut the local advantage by nearly 70%. Regression (14) uses the measure of enforcement of insider trading laws in Bushman, Piotroski, and Smith (2005). We find that the enforcement of insider trading laws is not related to analyst precision or to the local analyst advantage.

We then turn to variables that measure the quality and extent of disclosures. In countries where the quality and extent of disclosures are poorer we expect local analysts to have more of an advantage, because they benefit more from informal sources of information acquisition. Our first measure of the quality of disclosures is a dummy variable equal to one if the index of earnings management of a country (Leuz, Nanda, and Wysocki, 2003) is above the median of the countries in our sample. We find that the local advantage is sharply higher in countries with more earnings management. The local advantage is not significant in countries with below-median earnings management. We use next a dummy variable equal to one if a country's index of financial disclosures from the Center for International Financial Analysis and Research (CIFAR) is above the median for our sample (Bushman, Piotroski, and Smith, 2005). We find that the local advantage is significantly weaker in countries with higher disclosure according to that index. Note also that analyst forecasts are generally more (less) accurate in countries with a higher (lower) disclosure level.

Finally, we use a measure of functional efficiency of the capital markets introduced by Morck, Yeung, and Yu (2000). This measure is the average R^2 of market model regressions for a country. If the market return explains much of the return of individual securities, it means that idiosyncratic information about firms is not important. A high R^2 means that country-specific information is more important for stock returns. Residents might have more information about these factors. For instance, Kaufmann, Mehrez, and Schmukler (2003) find that local managers have useful information in predicting future movements in exchange rates. We find that the local advantage is significantly higher in countries with a high R^2 and that analyst forecasts are less accurate in these countries.

The results in Table 7 show that the local advantage is lower in countries where firms disclose more, firms manipulate earnings less, the stock market is functionally more efficient, and institutional investors are more active. However, measures of financial development and measures of investor protection do not seem to have a significant association with the size of the local advantage.

7. Is the local advantage endogenous?

So far, we have assumed that the local advantage is purely determined by location and by the information environment. Consequently, if one took an analyst and flipped a coin to determine whether that analyst becomes a local or a foreign analyst, the performance of the analyst would depend on the outcome of the coin flip. An alternative explanation we have ignored so far is that the local bias is driven by the demand for analyst services, which differs between local investors and foreign investors. There is a benefit to investors who are more accessible. Suppose that analysts differ only in ability and in support (databases, research assistants, and so on). Compensation increases with ability, and forecast quality increases with support. If local investors have a greater demand for analyst services, they will hire the better analysts and it will appear that there is a local advantage. With this view, we should see a higher local advantage for countries that foreign investors are less interested in, assuming that the demand for analyst services by foreign investors increases with their interest in a country. Leuz, Lins, and Warnock (2005) have evidence that U.S. investors are less interested in the stocks of firms with worse governance, so that firms with lower transparency might then have a greater local advantage because foreign investors hold less of such firms.

Perhaps the most striking evidence thus far that the local advantage is location driven has been the evidence on analyst fixed effects, i.e., the same analyst performs more poorly for foreign stocks than for local stocks. Unfortunately, the endogeneity hypothesis could also explain that result. If local investors have less interest in foreign stocks, an analyst might work harder on making forecasts for local stocks than for foreign stocks and hence it would appear that there is a local advantage. In the remainder of this section, we provide tests that attempt to evaluate whether the local advantage is demand driven.

To examine the endogeneity hypothesis, we would like to have a proxy for the demand for analyst services that is unrelated to information asymmetries. We believe that a country's *de jure* stock market openness is such a measure, though one might argue that openness depends on information asymmetries to the extent that there are more pressures on countries to open if they are more transparent. In any case, we use the fraction of a country's stock market capitalization available for investment to foreign investors from Bekaert, Harvey, and Lundblad (2005). This measure is available for 30 countries in our sample. If a country is completely open to foreign investors, the fraction is equal to one. At the other extreme, if the fraction is zero, foreigners hold no shares in the country and their demand for foreign analyst services will also be zero. The first regression in Table 8 uses a dummy variable set equal to one if a country is more open than the median country. The coefficient on the interaction with the local advantage is negative. The second regression uses the level of the openness measure. We find that the coefficient on the interaction is also negative, but marginally insignificant. These regressions are consistent with the hypothesis that there is a demand effect on the local advantage. However, countries with low openness are also poorer, less transparent countries. The correlation between openness and CIFAR is 0.51 in our sample. When we add the openness measure and the interaction of the local advantage with that measure to the regression with CIFAR, the openness interaction is insignificant and trivially small in absolute value, but the CIFAR interaction is significant. When we perform the same exercise with Morck's R^2, it turns out that neither the openness interaction nor the R^2 interaction is significant. It seems, therefore, that the high correlation between openness and other country characteristics could make it difficult to draw strong conclusions about the relation between openness and the local advantage.

If there is more demand for local analyst services than for foreign analyst services, we would expect there to be more local analysts than foreign analysts. Consequently, the endogeneity hypothesis should imply that the local advantage falls as the number of foreign analysts increases relative to the total number of analysts (the fraction of foreign analysts) following a country's stocks. There is a significant positive correlation between the fraction of the market portfolio of a country held by U.S. investors and the fraction of foreign analysts covering a stock in that country (the correlation coefficient is 0.15 with a p-value of less than 1%). The third regression of Table 8 shows that the local advantage is not lower when the fraction of foreign analysts following firms in a country is above the sample median. Surprisingly, though, we find (not reported in the table) that the local advantage is negatively related to the fraction of analysts who are pure local analysts. The most plausible explanation for this result is that local analysts are more important in countries in which information asymmetries are less important. An alternative approach, which we do not report in a table, is to model jointly the fraction of foreign analysts and the precision of analysts. With this approach, the precision of analysts then depends on the fraction of foreign analysts. We instrument the fraction of foreign analysts with the fraction of the country's equity held by U.S. investors and find that the local advantage is robust to this approach.

We investigate next whether the local advantage in a country is related to U.S. investors' interest in that country. We focus on U.S. investors because the data are available and because U.S. investors command more stock wealth than investors from any other country. We use four proxies for U.S. investors' interest, two that use data for both equity and debt and two others use only equity data. The first proxy is a dummy variable that takes the value one if U.S. holdings of equity and debt scaled by local market GDP are above the median of the countries in our sample. We use the TIC data from the U.S. Treasury. We find that this variable is extremely significant, as shown in regression (4) of Table 8. Essentially, there is little local advantage left for countries where the dummy variable takes a value of one. Interestingly, analyst forecasts in general are more precise in countries with greater holdings by U.S.

investors. This could be evidence that markets in which U.S. investors invest more are more functionally efficient. We also construct a dummy variable that takes the value one if equity and debt flows scaled by GDP are above the median for a country. Again, the local advantage is significantly lower for countries where this dummy variable takes the value one (regression (5) of Table 8). It follows that there is strong evidence that the local analyst advantage is strongest in countries that draw the least interest from U.S. investors.

We now turn to the two proxies that use equity data. The first proxy, used in regression (6), is the fraction of the equity market capitalization of a country held by U.S. investors. We find that the accuracy of analyst forecasts generally increases with U.S. investor presence in a market. Further, the local analyst advantage is negatively related to the presence of U.S. investors in the market. The second proxy, used in regression (7), is the share of a country's equities in the portfolios of U.S. investors. We find that the accuracy of analysts is not related to this proxy, but the local analyst advantage falls as a country's shares become more important in the portfolio of U.S. investors.

We also investigate whether the local advantage is the outcome of a demand effect driven by the home bias by focusing on the components of the demand for stocks in a country from foreign investors. If the local analyst advantage falls as the demand for analyst services by foreign investors increases, then higher holdings of a country's shares by U.S. investors should be associated with a lower local analyst advantage irrespective of why U.S. investors have higher holdings. Absent the home bias, U.S. investors would hold the world market float portfolio. The portfolio they hold is the world market float portfolio minus the home bias component, which we define as the difference between a country's share in the world market float portfolio and the country's share in the portfolio of U.S. investors (the DIFF variable in the regression). Keeping the home bias component constant, the demand by foreign investors for analyst services in a particular country should increase with that country's share in the world market portfolio (the WORLD RATIO variable), and hence the local analyst advantage should be inversely related to the country's share in the world market portfolio if the causation running from U.S. investor holdings to local analyst advantage is important. Regression (8) shows a regression where the interaction variable is a country's share in the world market float portfolio. We find that neither analyst precision nor the local analyst advantage is related to that variable. Regression (9) uses the DIFF variable as the interaction variable instead. In this case, the analyst precision is negatively related to DIFF. Further, the local analyst advantage is significantly higher when DIFF is higher (that is, when the home bias is higher).

If the local analyst advantage were driven by the demand for analyst services from foreign investors, we should find that DIFF and WORLD RATIO have identical coefficients. This is not the case. To investigate this directly, we estimate regression (10) with both the WORLD RATIO and DIFF. Strikingly, the coefficient on DIFF is much larger in absolute value than the coefficient on WORLD RATIO in the interactions. Equality of the absolute values of the coefficients is rejected with a p-value of 0.0064. Further, only the interaction with DIFF is significant. All of these results are consistent with causation running from information asymmetry between local and foreign residents to the home bias and the local analyst advantage, but not with causation running from the home bias to the local analyst advantage.

Our interpretation of the results implies that holdings by U.S. investors in a country should be negatively related to the size of the local analyst advantage. We find that this is the case. When we regress the portfolio share of a country for U.S. investors on the country's share in the world float market portfolio in 2002 and on our estimates of the local analyst advantage estimated for each country in Table 5, we obtain the following results (p-values in parentheses):

U.S. portfolio share = 0.333 + 0.967*World float market portfolio share – 2.240*Local analyst advantage

(0.287) (0.000) (0.074)

The adjusted R-square of the regression is 0.935. The coefficient on local analyst advantage is significant and negative as expected. We also estimate the regression omitting the United Kingdom and Japan. Our conclusions are unchanged.

The regressions in Table 8 are all cross-section regressions. It would be interesting to use time-series tests extensively. The endogeneity hypothesis would predict that following an increase in holdings of stocks of one country by foreign investors, the local advantage should fall. Our sample covers three years. In tests not reported in a table, we proceed as follows. We assume that the demand for analyst services for country j in year t by foreign investors depends on the holdings of stocks in that country by U.S. investors. in year t-1. Consequently, in our sample, the demand for analyst services of country j by foreign investors for year 2001 depends on holdings by U.S. investors of stocks form that country in year 2000. As a result, the change in the demand for analyst services by foreign investors from 2001 to 2003 depends on the change in holdings by U.S. investors from 2000 to 2002. Our measure of the change in holdings by U.S. investors form 2000 to 2002 is the sum of net purchases of stocks from the country normalized by the market capitalization in 2000. When we regress the change in the local advantage on the change in holdings, we find that there is a negative relation between the change in the local advantage and the change in holdings by U.S. investors, but the t-statistic on the coefficient on the change in holdings is -1.43, so that the relation is not significant.

8. Robustness tests

We now investigate further the extent to which our estimate of the local advantage is reliable. As discussed in Section 3, we have four measures of accuracy. Except in Table 3, we use only one of these measures. Table 9 estimates regression (3) of Table 4 for each of the three accuracy measures we have estimated but have not used so far in our regressions. Because the scale of the measures differs, we would expect the local advantage estimate to depend on the accuracy measure. However, we see that the local advantage is significant irrespective of the measure.

As explained in Section 3, we restrict our analysis to firms that are followed by both local and foreign analysts. To evaluate how our estimate of the local advantage is affected by that restriction, we extend our sample to include firms that are followed by only one type of analyst. Again, the significance of our result is not affected. The regressions reported so far use the latest forecast of each analyst. Regression (5) extends the sample to include all analyst forecasts during our sample period. We see that the local advantage remains significant when we add these additional forecasts.

Finally, in regression (6), we add additional control variables that might be related to accuracy. We include the number of forecasts made, the number of firms covered, and the number of countries covered by each analyst. Adding these variables does not affect our results and does not add to the explanatory power of our regressions.

9. Conclusion

Using a sample of 32 countries, we examine whether analysts resident in a country make more precise earnings forecasts for firms in that country than analysts who are not resident in that country. We find that the earnings forecasts of local analysts are more precise, and call this greater precision the local analyst advantage. We interpret this local advantage as evidence that local analysts are better informed than foreign analysts because of their proximity to their covered firm. However, we investigate extensively two alternative hypotheses. The first is that the local advantage is due to differences in firm and analyst characteristics. We find strong evidence that the local advantage holds when we allow for analyst fixed effects, so that the same analyst is better at forecasting earnings for local stocks than for foreign stocks. Such evidence is inconsistent with the explanation that the local advantage is due to analyst differences. The second alternative hypothesis is that the local advantage results from differences in demand for analyst services, so that when foreign demand for analyst services is weak, fewer resources are expended in producing forecasts by non-local analysts. We again find evidence against this hypothesis, but our conclusions are subject to the caveat that, we cannot completely exclude the possibility that changes in demand for analyst services might ultimately be caused by a reduction in information asymmetries.

If the local analyst advantage is due to location, we would expect it to be lower for firms with better disclosures and for firms with international activities. We find that this is the case. This local analyst advantage holds when we control for analyst characteristics as well as firm characteristics. However, it varies substantially across countries. The local analyst advantage is strong in countries where disclosures are weaker, where institutional investors are less important, where corporate ownership is more concentrated, and where accounting information is less informative. We find that the local analyst advantage is strong in countries that are more underweighted in U.S. portfolios relative to their share in the float world market portfolio, so that the underlying information asymmetries that lead to the local analyst advantage also contribute to the home bias.

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Table 1 Distribution of sample firms and analysts by country and analyst group

The table shows the number of firms and the number of pure local, expatriate, and foreign analysts in each country. The sample firms are the intersection of I/B/E/S for non-U.S. firms, Nelson's Directories of Investment Research, and Standard & Poor's Transparency and Disclosure database. The final sample contains 1,020 pure local, 1,563 expatriate, and 1,920 foreign analysts covering 611 firms from 32 countries over the period 2001 to 2003. Local analysts are analysts located in the same country as their covered firms, while foreign analysts are located in a different country from the firms they cover. Local analysts are furthered classified into pure local and expatriate analysts. Pure local analysts work for local research firms, while expatriate analysts work for research firms from foreign countries. The number of analysts across countries does not add up to the total number since an analyst (particularly a foreign analyst) can analyze several firms in different countries. Similarly, the number of local and foreign analysts does not add up to the total number of distinct analysts since an analyst can switch brokerage firms across borders.

Country	No. of firms	Number of analysts				A / C
		Foreign (A)	Local analysts (B)		Total number of distinct analysts (C)	
			Pure local	Expatriate		
Argentina	7	25	2	2	29	0.86
Australia	16	27	20	77	123	0.22
Austria	2	24	2	1	27	0.89
Belgium	6	70	13	9	92	0.76
Brazil	23	85	16	27	126	0.66
Chile	7	25	1	3	29	0.86
China	9	67	0	7	74	0.91
Denmark	6	99	7	26	132	0.75
Finland	4	80	10	10	100	0.80
France	47	526	153	130	806	0.65
Germany	31	454	94	64	611	0.74
Hong Kong	17	26	37	141	202	0.13
India	17	25	10	53	86	0.29
Indonesia	11	23	0	19	42	0.55
Ireland	3	43	8	1	51	0.84
Italy	26	250	32	56	335	0.75
Japan	61	18	25	108	146	0.12

Korea	13	13	7	27	47	0.28
Malaysia	23	63	27	53	140	0.45
Mexico	14	72	7	11	90	0.80
Netherlands	23	405	69	32	503	0.80
Norway	4	32	5	23	60	0.53
Philippines	8	34	0	26	60	0.57
Portugal	7	87	16	2	105	0.83
Singapore	9	40	28	55	123	0.33
South Africa	3	11	1	16	28	0.39
Spain	17	208	8	56	271	0.77
Sweden	18	217	47	39	298	0.73
Switzerland	17	300	61	11	372	0.81
Taiwan	25	48	4	62	113	0.42
Thailand	19	41	5	33	77	0.53
United Kingdom	118	291	305	385	950	0.30
Total	611	1,920	1,020	1,563	3,482	

Table 2 Description of variables
The table describes the variable definitions.

A. Dependent variables

$pmafe_{ijt}$	Proportional Mean Absolute Forecast Error is defined as the ratio of the difference between the absolute forecast error (AFE_{ijt}) by analyst i for firm j at time t and the mean absolute forecast error ($avgAFE_{jT}$) of all of the forecasts for firm j for fiscal year T, to the mean absolute forecast error $avgAFE_{jT}$, i.e., $pmafe_{ijt}=(AFE_{ijt}-avgAFE_{jT})/avgAFE_{jT}$. A positive $pmafe_{ijt}$ indicates that the absolute forecast error AFE_{ijt} by analyst i for firm j at time t is larger than the average absolute forecast error of all of the forecasts for the firm j for the same fiscal year T. To facilitate interpretation we multiply this variable by minus one.
$pmafep_{ijt}$	Proportional Mean Price-scaled Absolute Forecast Error is similar to pmafe except that AFE_{ijt} is scaled by the latest available monthly stock price from Compustat, i.e,. $pmafep_{ijt}=(AFEP_{ijt}-avgAFEP_{jT})/avgAFEP_{jT}$. To facilitate interpretation we multiply this variable by minus one.
$dafep_{ijt}$	De-meaned Absolute Forecast Errors scaled by the most recent stock prices in the previous fiscal year. The price-scaled absolute forecast error $AFEP_{ijt}$ of analyst i for firm j at time t is computed as the price-scaled absolute difference between an earnings forecast and the actual disclosed earnings. To facilitate interpretation we multiply this variable by minus one.
$range_{ijt}$	$range_{ijt}$ is the ratio of the difference between the maximum $afep_{ijt}$ for firm j, fiscal year T and a particular $afep_{ijt}$, to the range of $afep_{ijt}$ for firm j and fiscal year T.

B. Independent variables (firm- or analyst-level)

$local_{ijt}$	Dummy variable that equals one if analyst i is located in the same country as the covered firm j at time t, and zero otherwise.
pure $local_{ijt}$	Dummy variable that equals one if analyst i is located in the same country as the covered firm j at time t and works for a local research firm, and zero otherwise.

$expatriate_{ijt}$	Dummy variable that equals one if analyst i is located in the same country as the covered firm j at time t and work for a research firm from a foreign country, and zero otherwise.
regional $foreign_{ijt}$	Dummy variable that equals one if foreign analyst i is located in the same region as the covered firm j at time t and works for a research firm from a foreign country, and zero otherwise.
$horizon_{ijt}$	Forecast age in years between the forecast date t and the corresponding I/B/E/S report date of the actual earnings. i denotes analysts and j denotes firms.
$firmexp_{ijt}$	Analyst firm-specific experience, defined as the time interval in years between analyst i's first forecast for a particular firm j and thes forecast at time t for firm j.
$genexp_{it}$	Analyst general experience, defined as the time interval in years between analyst i's first forecast in the I/B/E/S database and the current forecast at time t.
firm $size_{jy}$	Log of market capitalization in US million dollars for firm j in year Y.
$brsize_{iY}$	Brokerage size, defined as the number of analysts working for the I/B/E/S brokerage that analyst i is associated with in year Y.
ind_{iY}	Number of I/B/E/S industries analyst i covers in year Y.
$nctry_{iY}$	Number of countries analyst i covers in year Y.
$ntik_{iY}$	Number of firms analyst i covers in year Y.
$nfcst_{iY}$	Number of forecasts analyst i provides in year Y for all of the firms he or she covers.
$tdscore_j$	Transparency dummy equal to one if the overall score in Standard & Poor's Transparency and Disclosure dataset for firm j is above the

	median score for all of the covered firms in the final sample, and zero otherwise.
adr_{jt}	Dummy variable indicating whether firm j has an ADR program in place at time t. The ADR information is from the website of the Bank of New York.
Dummy for analyst $following_{jY}$	Dummy variable that equals one if the number of analyst following a firm j in year Y in each country is above the median number of analyst following in year Y in each country, and zero otherwise.
Dummy for foreign $assets_{jY}$	Dummy variable that equals one if the disclosed foreign assets for firm j in year Y are positive, and zero otherwise. The data are obtained from Worldscope.
$Foreigntolocal_{ij}$	Dummy equal to one if analyst i covers the same firm j but changes from being a foreign to a local analyst during our sample period, and zero otherwise.
$Localtoforeign_{ij}$	Dummy equal to one if analyst i covers the same firm j but changes from being a local to a foreign analyst during our sample period, and zero otherwise.

C. Independent variables (country-level)

English $language_i$	Dummy variable equal to one if English is an official language for the domicile country of the covered firm, and zero otherwise. The original source is the CIA World Factbook and the website of http://www.cepii.fr/anglaisgraph/bdd/distances.htm
GDP per $capita_i$	Dummy variable equal to one if the GDP of a country is above the median of the countries in the final sample, and zero otherwise. The data are from the World Development Indicator 2002.
developed $market_i$	Dummy variable equal to one if country i is a developed country, and zero otherwise. The data are from Standard and Poor's Global Stock Markets Factbooks, 2004.
equity $market_i$	Dummy variable equal to one if the index of the equity market importance is above the median of the countries in the final sample, and zero otherwise. The raw data are from Leuz, Nanda, and Wysocki (2003).

state ownership$_i$	Dummy variable equal to one if the state ownership of banking for country i is above the median of the countries in the final sample, and zero otherwise. The data are from Barth, Caprio, and Levine (2004).
foreign bank ownership$_i$	Dummy variable equal to one if the foreign ownership of banking for country i is above the median of the countries in the final sample, and zero otherwise. The data are from Barth, Caprio, and Levine (2004).
ownership concentration$_i$	Dummy variable equal to one if the average ownership of three largest shareholders for the ten largest non-financial domestic private firms in country i is above the median of the countries in the final sample, and zero otherwise. The data are from La Porta et al. (1998).
pooled investment$_i$	Dummy variable equal to one if the average of total assets of pooled investment schemes to GDP between 1993 and 1995 for country i is above the median of the countries in the final sample, and zero otherwise. The data are from Beck, Demirguc-Kunt, and Levine (1999).
legal origin$_i$	Dummy variable equal to zero if the legal origin of country i is common law, and one otherwise. The raw data are from La Porta et al. (1998).
anti-director rights$_i$	Dummy variable equal to one if the anti-director index for country i is equal to or greater than 4 according to Djankov, La Porta, Lopez-de-Silanes, and Shleifer (2005), and zero otherwise. The raw anti-director index ranges from 0 to 5, with higher scores for stronger rights.
property rights$_i$	Dummy variable equal to one if the property rights index for country i is above the median of the countries in the final sample, and zero otherwise. The raw data are from La Porta et al. (2006).
public enforcement$_i$	Dummy variable equal to one if the index of public enforcement for country i is above the median of the countries in the final sample, and zero otherwise. The index equals the arithmetic mean of: (1) Supervisor characteristics index; (2) Investigative powers index; (3) Orders index; and (4) Criminal index. The data are from La Porta et al. (2006).
class action$_i$	Dummy variable equal to one if class action suits are available in a prospectus liability case. The data are from La Porta et al. (2006).
insider trading enforcement$_j$	Dummy variable indicating whether covered firm j is from a country with insider trading law enforcement according to the data source from Bushman, Piotroski, and Smith (2005).

earnings $management_i$	Dummy variable equal to one if the index of earnings management for country i is above the median of the countries in the final sample, and zero otherwise. The data are from Leuz, Nanda, and Wysocki (2003).
$CIFAR_i$	Dummy variable equal to one if the index of financial disclosure for country i is above the median of the countries in the final sample, and zero otherwise. The data are from Bushman, Piotroski, and Smith (2004).
$R^2\_Morck_i$	Dummy variable equal to one if the average of the R2s estimated from the market model for country i is above the median of the countries in the final sample, and zero otherwise. The data are from Morck, Yeung, and Yu (2000).
US $holdings_i$	Dummy variable equal to one if U.S. investors' overseas holding of equity and debt scaled by local market GDP is above the median of the countries in the final sample, and zero otherwise. The data are from the U.S. Treasury Department.
US $flows_i$	Dummy variable equal to one if the U.S. investors' overseas equity and debt flow scaled by local market GDP is above the median of the countries in the final sample, and zero otherwise. The data are from the U.S. Treasury Department.
US $equity_i$	The fraction of the local equity market capitalization held by U.S. investors.
US $portfolio_i$	The share of a country's equities in the portfolio of U.S. investors.
WORLD $RATIO_i$	The share of a country's market capitalization in the world market portfolio.
$DIFF_i$	The difference between a country's share in the world market portfolio and the country's share in the portfolio of U.S. investors.
Openness $level_i$	Ratio of the market capitalization of the constituent firms comprising the IFC Investable index to those that comprise the IFC Global index for each country. The data are from Bekaert, Harvey, and Lundblad (2005).
Openness $dummy_i$	Dummy variable equal to one if a country's openness level is greater than the median of the sample countries, and zero otherwise.

Foreign analyst $ratio_i$	Dummy variable equal to one if the ratio of the number of foreign analysts to the total number of analysts in a firm country is greater than the median of the sample countries, and zero otherwise. The data are based on Table 1.

Table 3 Summary statistics by analysts groups

The table shows summary statistics of the main variables used in the analysis. The sample firms are the intersection of I/B/E/S for non-U.S. firms, Nelson's Directories of Investment Research, and Standard & Poor's Transparency and Disclosure database. The final sample contains 1,020 pure local, 1,563 expatriate, and 1,920 foreign analysts covering 611 firms from 32 countries over the period 2001 to 2003. Local analysts are analysts located in the same country as the firms they cover, while foreign analysts are located in a different country from the firms they cover. Local analysts are furthered classified into pure local and expatriate analysts. Pure local analysts work for local research firms, while expatriate analysts work for research firms from foreign countries. The summary statistics of forecast-related variables are computed by partitioning each earning forecast (and its related variables) into one of the three different groups depending on the analyst identity. The summary statistics of analyst-related variables are computed as follows. The average value of an analyst-related variable is computed for each analyst in each of the three different analyst groups. The mean and median are then computed across analysts for each analyst group. To facilitate interpretation, we multiply the forecast variables by minus one, so that higher values of the dependent variable imply more accurate forecasts. All variables are as defined in Table 2. Numbers in parentheses are p-values.

Variable	Pure local (A)		Expatriate (B)		Foreign (C)		A-B		B-C		A-C	
	Mean	Median	Mean	Median	Mean	Median	Mean t-test	Wilcoxon Median test	Mean t-test	Wilcoxon Median test	Mean t-test	Wilcoxon Median test
Panel A: Forecast-related variables												
pmafep	0.023	0.168	0.045	0.156	-0.042	0.153	(0.16)	(0.91)	(0.00)	(0.00)	(0.00)	(0.00)
pmafe	0.024	0.141	0.049	0.155	-0.045	0.146	(0.10)	(0.64)	(0.00)	(0.00)	(0.00)	(0.01)
dafep	0.001	0.001	0.000	0.001	-0.001	0.001	(0.68)	(0.22)	(0.01)	(0.36)	(0.01)	(0.04)
range	0.638	0.736	0.634	0.728	0.639	0.735	(0.51)	(0.56)	(0.31)	(0.95)	(0.84)	(0.52)
firmexp	2.077	1.315	1.968	1.422	1.595	1.005	(0.01)	(0.80)	(0.00)	(0.00)	(0.00)	(0.00)
genexp	3.386	2.704	3.288	2.753	3.648	2.778	(0.06)	(0.47)	(0.00)	(0.00)	(0.00)	(0.00)
horizon	0.406	0.321	0.408	0.321	0.411	0.321	(0.77)	(0.50)	(0.50)	(0.20)	(0.36)	(0.66)
No. of obs.	4,412		6,536		9,477							

Variable	Pure local (A)		Expatriate (B)		Foreign (C)		A-B		B-C		A-C	
	Mean	Median	Mean	Median	Mean	Median	Mean t-test	Wilcoxon Median test	Mean t-test	Wilcoxon Median test	Mean t-test	Wilcoxon Median test
Panel B: Analyst-related variables												
mv	17,723	8,681	16,082	7,145	18,243	9,993	(0.15)	(0.00)	(0.02)	(0.00)	(0.57)	(0.05)
brsize	90.439	37.857	133.795	109.000	137.234	124.000	(0.00)	(0.00)	(0.32)	(0.14)	(0.00)	(0.00)
ind	4.028	3.000	4.022	3.000	4.377	3.750	(0.96)	(0.48)	(0.00)	(0.00)	(0.00)	(0.00)
nctry	2.020	1.000	2.241	1.683	3.225	3.000	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
ntik	9.784	8.250	8.995	8.000	8.375	7.528	(0.00)	(0.09)	(0.00)	(0.00)	(0.00)	(0.00)
nfcst	20.913	18.000	24.541	21.688	22.823	19.000	(0.00)	(0.00)	(0.02)	(0.00)	(0.00)	(0.00)
No. of obs.	1,020		1,563		1,920							

Table 4 Forecast accuracy and local analyst advantage

This table presents ordinary least squares regression estimates of forecast accuracy on a local analyst dummy and on analyst, forecast, and firm characteristics. The dependent variable (Pmafep) is computed as $Pmafep_{ijt}=(AFEP_{ijt}- avgAFEP_{jT})/avgAFEP_{jT}$ where $AFEP_{ijt}$ is the absolute forecast error by analyst i for firm j at time t scaled by the latest available monthly stock price and $avgAFEP_{jT}$ is the mean absolute forecast error of all of the forecasts for firm j for fiscal year T. To facilitate interpretation, we multiply this variable by minus one, so that higher values of the dependent variable imply more accurate forecasts. All variables are defined in Table 2. Independent variables are de-meaned by the firm/year averages to reduce heteroskedasticity. T-statistics in parentheses are adjusted for firm-level clustering with the exception of model (5). Model (4) is based on the matched sample where each foreign forecast for a firm is matched to the local forecast for the same fiscal year that immediately precedes it in time, so that the forecast horizon of local forecasts is longer than that of foreign forecasts. Model (5) is estimated with firm fixed effects. Model (8) is estimated with analyst fixed effects. Model (9) estimates the performance of analysts who change status by becoming local analysts, while model (10) estimates the performance of analysts who change status by becoming foreign analysts during our sample period.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dummy for local analysts		*0.051* *(4.63)*	*0.047* *(4.32)*	*0.069* *(3.94)*	*0.063* *(5.04)*	*0.090* *(3.63)*		*0.047* *(3.96)*	*0.045* *(4.10)*	*0.045* *(4.12)*
Dummy for regional foreign analysts						*0.050* *(1.94)*				
Dummy for pure local analysts							*0.048* *(3.15)*			
Dummy for Expatriate analysts							*0.047* *(3.86)*			
Foreigntolocal									*0.146* *(2.24)*	
Localtoforeign										*0.014* *(0.19)*
Broker size	0.002 (0.36)	0.006 (1.06)	0.007 (1.29)	-0.009 (-1.05)	0.008 (1.50)	0.006 (1.15)	0.007 (1.29)	0.006 (1.23)	0.007 (1.32)	0.007 (1.29)
Forecast horizon	-0.573 (-15.64)	-0.570 (-15.57)	-0.572 (-15.62)	-0.723 (-15.76)	-0.593 (-30.05)	-0.572 (-15.62)	-0.572 (-15.63)	-0.572 (-22.95)	-0.571 (-15.65)	-0.572 (-15.65)
Number of industries covered	-0.002 (-0.80)	-0.000 (-0.18)	0.000 (0.11)	-0.001 (-0.21)	0.001 (0.28)	0.000 (0.10)	0.000 (0.11)	0.000 (0.08)	0.000 (0.04)	0.000 (0.04)
Firm-specific experience			0.007 (1.98)	0.007 (1.09)	0.006 (1.89)	0.008 (2.09)	0.007 (1.97)	0.007 (1.89)	0.007 (1.98)	0.007 (1.96)
Career experience			-0.009 (-3.81)	-0.011 (-2.77)	-0.009 (-4.03)	-0.010 (-3.83)	-0.009 (-3.82)	-0.010 (-3.49)	-0.009 (-3.76)	-0.009 (-3.65)

Firm size	0.012 (4.05)	0.015 (4.55)	0.014 (4.51)	0.005 (0.78)	0.173 (9.49)	0.014 (4.52)	0.014 (4.44)	0.014 (3.21)	0.014 (4.39)	0.014 (4.39)
Constant	-0.070 (-2.64)	-0.118 (-3.92)	-0.114 (-3.82)	-0.036 (-0.61)	-1.535 (-9.45)	-0.157 (-4.46)	-0.114 (-3.77)	-0.114 (-2.75)	-0.110 (-3.64)	-0.109 (-3.63)
Number of observations	20,221	20,221	20,221	8,313	20,221	20,221	20,221	20,221	20,221	20,221
Adjusted R^2	0.042	0.043	0.043	0.055	0.019	0.044	0.043	0.041	0.042	0.042
Test: pure local=expatriate F-statistic (p-value)							0.00 (0.96)			

Table 5 Forecast accuracy for subsamples partitioned by forecast horizon, fiscal year, and country
This table presents ordinary least squares regression estimates of forecast accuracy on a local analyst dummy and on analyst, forecast, and firm characteristics for the subsamples partitioned by forecast horizon, by year, and by country. Horizon zero refers to forecasts provided within 180 days after the fiscal year end but at least five days before the reporting dates of actual earnings according to I/B/E/S. Horizon one refers to forecasts provided within one year before the fiscal year-end. The dependent variable (Pmafep) is computed as $Pmafep_{ijt}=(AFEP_{ijt}-avgAFEP_{jT})/avgAFEP_{jT}$ where $AFEP_{ijt}$ is the absolute forecast error by analyst i for firm j at time t scaled by the latest available monthly stock price and $avgAFEP_{jT}$ is the mean absolute forecast error of all of the forecasts for firm j for fiscal year T. To facilitate interpretation, we multiply this variable by minus one, so that higher values of the dependent variable imply more accurate forecasts. All variables are defined in Table 2. Independent variables are de-meaned by the firm/year averages to reduce heteroskedasticity. T-statistics adjusted for firm-level clustering are in parentheses.

Variables	Horizon		Year		
	0	1	2001	2002	2003
Dummy for local analysts	*0.074* *(2.85)*	*0.040* *(3.16)*	*0.067* *(3.58)*	*0.037* *(2.01)*	*0.036* *(1.89)*
Broker size	-0.004 (-0.34)	0.010 (1.52)	0.002 (0.21)	0.009 (0.90)	0.010 (1.04)
Forecast horizon	-0.429 (-3.33)	-0.675 (-17.34)	-0.751 (-12.77)	-0.487 (-8.57)	-0.472 (-8.06)
Number of industries covered	-0.003 (-0.60)	0.001 (0.25)	0.001 (0.47)	0.003 (0.88)	-0.004 (-1.16)
Firm-specific experience	0.010 (1.39)	0.006 (1.51)	0.015 (2.39)	0.005 (0.76)	0.005 (0.77)
Career experience	-0.009 (-2.10)	-0.009 (-3.36)	-0.012 (-2.63)	-0.009 (-1.82)	-0.009 (-2.40)
Firm size	0.007 (0.55)	0.017 (4.49)	0.015 (3.69)	0.024 (4.01)	0.005 (1.14)
Constant	-0.096 (-0.79)	-0.106 (-3.03)	-0.128 (-3.29)	-0.187 (-3.47)	-0.031 (-0.68)
Number of observations	4,528	15,693	6,598	6,507	7,116
Adjusted R^2	0.006	0.056	0.075	0.034	0.026

By country				
Country	Coef. for local	t-statistic	No. of obs	Adjusted R^2
Argentina	0.662	2.25	48	0.102
Australia	-0.092	-0.76	265	0.036
Austria	-0.334	-0.66	44	0.083
Belgium	0.341	2.70	201	0.051
Brazil	0.074	0.97	471	0.051
Chile	0.056	0.24	52	0.139
China	0.346	1.89	208	0.040
Denmark	0.393	2.55	244	0.009
Finland	-0.078	-0.50	184	-0.001
France	0.026	0.78	2,569	0.027
Germany	0.094	2.09	1,794	0.046
Hong Kong	-0.029	-0.31	558	0.130
India	0.306	3.39	287	0.057
Indonesia	0.390	3.13	159	0.158
Ireland	0.145	0.65	152	-0.011
Italy	0.068	1.40	1,091	0.034
Japan	0.196	3.00	834	0.141
Korea	0.241	1.86	103	0.222
Malaysia	0.027	0.44	614	0.159
Mexico	-0.159	-1.58	267	0.026
Netherlands	0.031	0.61	1,335	0.063
Norway	-0.314	-1.25	103	0.045
Philippines	0.120	0.82	131	0.068
Portugal	0.119	0.69	187	0.042
Singapore	0.164	1.76	316	0.080
South Africa	0.301	1.53	59	-0.016
Spain	0.054	0.84	773	0.028
Sweden	0.082	1.25	857	0.029
Switzerland	0.073	1.07	952	0.050
Taiwan	0.060	0.82	480	0.316
Thailand	0.036	0.43	362	0.190
United Kingdom	0.017	0.65	4,521	0.013

Table 6 Local analyst advantage and firm-level information environment

This table presents ordinary least squares regression estimates of forecast accuracy on a dummy variable for local analysts, on analyst, firm, and forecast characteristics, and on variables that proxy for the firm-level information environment. Four proxies for the firm-level information environment are used: a dummy for S&P's Transparency and Disclosure score (equal to one if S&P's Transparency and Disclosure score is above the median score of sample firms), a dummy that equals one for firms with an ADR program, a dummy for analyst following (equals one if the number of analysts following the sample firm that year is above the median number of analysts following firms in the firm's country that year), and a dummy for foreign assets (equals one if the disclosed foreign assets segment is positive). The dependent variable (Pmafep) is computed $Pmafep_{ijt}=(AFEP_{ijt}-avgAFEP_{jT})/avgAFEP_{jT}$ where $AFEP_{ijt}$ is the absolute forecast error by analyst i for firm j at time t scaled by the latest available monthly stock price and $avgAFEP_{jT}$ is the mean absolute forecast error of all of the forecasts for firm j for fiscal year T. To facilitate interpretation, we multiply this variable by minus one, so that higher values of the dependent variable imply more accurate forecasts. All variables are defined in Table 2. Independent variables are de-meaned by the firm/year averages to reduce heteroskedasticity. T-statistics adjusted for firm-level clustering are in parentheses.

Variables	(1)	(2)	(3)	(4)
Dummy for local analysts (a)	*0.068* *(3.88)*	*0.067* *(4.50)*	*0.046* *(3.08)*	*0.064* *(4.53)*
Dummy for transparency (b)	*0.011* *(0.80)*			
*(a) * (b)*	*-0.037* *(-1.67)*			
Dummy for ADR firm (c)		*0.017* *(1.28)*		
*(a) *(c)*		*-0.038* *(-1.74)*		
Dummy for analyst following (d)			*0.002* *(0.15)*	
(a)(d)*			*0.002* *(0.11)*	
Dummy for foreign assets (e)				*0.015* *(1.00)*
*(a) * (e)*				*-0.046* *(-2.00)*
Broker size	0.007 (1.33)	0.007 (1.32)	0.007 (1.28)	0.008 (1.44)
Forecast horizon	-0.572 (-15.61)	-0.572 (-15.64)	-0.572 (-15.62)	-0.572 (-15.61)
Number of industries covered	0.000 (0.11)	0.000 (0.13)	0.000 (0.11)	0.000 (0.20)
Firm-specific experience	0.007 (1.95)	0.007 (1.98)	0.007 (1.97)	0.007 (1.93)
Career experience	-0.009 (-3.81)	-0.009 (-3.80)	-0.009 (-3.81)	-0.009 (-3.74)
Firm size	0.015 (4.68)	0.015 (4.61)	0.014 (4.15)	0.014 (4.51)
Constant	-0.126 (-4.18)	-0.128 (-4.25)	-0.110 (-3.61)	-0.117 (-3.90)
Number of observations	20,221	20,221	20,221	20,221
Adjusted R^2	0.043	0.043	0.043	0.044

Table 7 Local analyst advantage and country characteristics

This table presents ordinary least squares regression estimates of forecast error on a local analyst dummy, on analyst, firm, and forecast characteristics, and on country characteristics. Country characteristic variables include variables related to culture, degree of economic and financial development, degree of foreign portfolio investment, degree of investor protection, transparency and disclosure, and private information acquisition and communication. The dependent variable (Pmafep) is computed $Pmafep_{ijt}=(AFEP_{ijt}-avgAFEP_{jT})/avgAFEP_{jT}$ where $AFEP_{ijt}$ is the absolute forecast error by analyst i for firm j at time t scaled by the latest available monthly stock price and $avgAFEP_{jT}$ is the mean absolute forecast error of all of the forecasts for firm j for fiscal year T. To facilitate interpretation, we multiply this variable by minus one, so that higher values of dependent variable imply more accurate forecasts. All country characteristic variables are defined in Table 2. The regressions include the same control variables as in Table 5 and are not reported for brevity. T-statistics adjusted for firm-level clustering are in parentheses.

Model	Country characteristics	Local dummy	Country Characteristic variable	Local dummy x Country Characteristic variable	Number of observations	Adjusted R^2
(1)	English language	0.065 (4.55)	-0.005 (-0.29)	-0.032 (-1.22)	20,221	0.044
(2)	GDP per capita	0.076 (3.79)	0.021 (1.55)	-0.039 (-1.64)	19,741	0.039
(3)	Developed market	0.063 (2.80)	-0.009 (-0.54)	-0.019 (-0.72)	20,221	0.043
(4)	Equity market	0.070 (3.57)	0.017 (1.22)	-0.034 (-1.39)	19,175	0.044
(5)	State ownership	0.030 (1.83)	-0.008 (-0.59)	0.044 (1.77)	15,110	0.045
(6)	Foreign bank ownership	0.089 (4.09)	0.010 (0.59)	-0.035 (-1.05)	8,785	0.050
(7)	Ownership concentration	0.033 (2.22)	-0.011 (-0.79)	0.050 (2.22)	20,013	0.044
(8)	Pooled investment	0.121 (4.50)	0.043 (3.05)	-0.100 (-3.29)	16,141	0.029
(9)	Legal origin	0.032 (1.61)	0.000 (0.01)	0.033 (1.32)	20,221	0.044
(10)	Antidirector rights	0.041 (3.32)	-0.004 (-0.22)	0.027 (1.09)	20,221	0.043
(11)	Property rights	0.078 (3.96)	0.019 (1.44)	-0.040 (-1.71)	20,013	0.043
(12)	Public enforcement	0.071 (3.99)	-0.002 (-0.13)	-0.031 (-1.31)	20,013	0.044
(13)	Class action	0.083 (5.22)	0.012 (0.89)	-0.055 (-2.46)	20,013	0.044

Model	Country characteristics	Local dummy	Country Characteristic variable	Local dummy x Country Characteristic variable	Number of observations	Adjusted R^2
(14)	Insider trading enforcement	0.068 (2.97)	0.015 (1.07)	-0.027 (-1.04)	19,854	0.043
(15)	Earnings management	0.023 (1.44)	-0.027 (-1.88)	0.070 (3.09)	19,175	0.044
(16)	CIFAR	0.088 (5.24)	0.022 (1.62)	-0.062 (-2.77)	19,854	0.043
(17)	R^2_Morck	0.032 (2.25)	-0.034 (-2.37)	0.059 (2.54)	18,746	0.044

Table 8 Foreign investors and local analyst advantage

Ordinary least squares regression estimates of forecast error on a local analyst dummy, on analyst, firm, and forecast characteristics, and on proxies for foreign investment. Variables that proxy for the degree of foreign investment and demand for analyst services by foreign investors include (1) a dummy that takes the value one if a country's openness score is greater than the median of the sample countries (openness dummy), (2) the openness score defined as the ratio of the market capitalization of the constituent firms comprising the IFC Investable index to those that comprise the IFC Global index for each country, (3) the ratio of the number of foreign analysts to the total number of analysts that are active in the firm country, (4) a dummy variable that takes value one if a country's U.S. holdings of equity and debt scaled by local market GDP is greater than the median of the sample countries (US holdings), (5) a dummy variable that takes the value one if a country's U.S. flow of equity and debt scaled by local market GDP is greater than the median of the sample countries (US flow), (6) the fraction of the equity market capitalization held by U.S. investors (US equity), (7) the share of a country's equities in the portfolio of U.S. investors (US portfolio), (8) the fraction of foreign analysts over the total number of analysts following each firm in each fiscal year, (9) the country's share in the world market portfolio (WORLD RATIO), and (10) the difference between a country's share in the world market portfolio and the country's share in the portfolio of U.S. investors (DIFF). The dependent variable (Pmafep) is computed as $Pmafep_{ijt}=(AFEP_{ijt}-avgAFEP_{jT})/avgAFEP_{jT}$ where $AFEP_{ijt}$ is the absolute forecast error by analyst i for firm j at time t scaled by the latest available monthly stock price and $avgAFEP_{jT}$ is the mean absolute forecast error of all of the forecasts for firm j for fiscal year T. To facilitate interpretation, we multiply this variable by minus one, so that higher values of dependent variable imply more accurate forecasts. All country characteristic variables are defined in Table 2. The regressions include the same control variables as in Table 5 and are not reported for brevity. T-statistics adjusted for firm-level clustering are in parentheses.

Model	Country characteristics that proxy for foreign investment	Local dummy	Country Characteristic	Local dummy x Country Characteristic	Number of observations	Adjusted R^2
(1)	Openness dummy	0.089 (4.07)	0.030 (1.80)	-0.053 (-2.09)	19,533	0.039
(2)	Openness level	0.107 (2.92)	0.029 (1.05)	-0.066 (-1.63)	19,533	0.039
(3)	Foreign analysts ratio	0.058 (2.39)	0.060 (1.98)	0.024 (0.52)	20,221	0.044
(4)	US holdings	0.101 (5.78)	0.044 (3.19)	-0.077 (-3.49)	20,221	0.044
(5)	US flows	0.093 (4.55)	0.031 (2.34)	-0.060 (-2.51)	19,741	0.039
(6)	US equity	0.084 (4.94)	0.001 (2.81)	-0.002 (-2.86)	20,221	0.044
(7)	US portfolio	0.079 (5.11)	0.000 (0.12)	-0.002 (-2.06)	20,221	0.044
(8)	WORLD RATIO	0.076 (4.79)	-0.000 (-0.47)	-0.002 (-1.57)	20,221	0.044
(9)	DIFF	0.053 (4.79)	-0.010 (-2.31)	0.018 (2.93)	20,221	0.044
(10)	WORLD RATIO	0.073 (4.59)	-0.001 (-0.83)	-0.001 (-1.01)	20,221	0.045
	DIFF		-0.010 (-2.32)	0.014 (2.17)		

Table 9 Robustness tests

The table presents the results of robustness tests using different proxies for forecast accuracies and different samples. Models (1) through (3) use alternative proxies for forecast errors as dependent variables. Model (1) uses 'pmafe' as the dependent variable, Model (2) 'dafep', and Model (3) 'range'. All variables are defined in Table 2 and rescaled such that higher values indicate more accurate forecasts. Model (4) is estimated for the sample that does not impose the restriction that a firm is followed by both local and foreign analysts. Model (5) is estimated for the sample that contains all the annual earnings forecasts that analysts provide for the firms they cover over 2001-2003. Model (6) adds additional control variables that could affect forecast accuracy. Independent variables are de-meaned by the firm/year averages to reduce heteroskedasticity. All models are estimated with ordinary least squares regressions except Model (3) which uses random effect regression at the firm level. T-statistics adjusted for firm-level clustering are in parentheses.

	(1)	(2)	(3)	(4)	(5)	(6)
Dummy for local analysts	0.065 (5.17)	0.001 (3.03)	0.010 (2.02)	0.061 (5.73)	0.021 (2.52)	0.068 (5.37)
Broker size	0.008 (1.30)	0.000 (1.39)	0.004 (1.86)	0.011 (1.88)	0.295 (0.76)	0.010 (1.53)
Forecast horizon	-0.834 (-19.87)	-0.009 (-6.80)	-0.223 (-26.81)	-0.696 (-18.12)	-0.679 (-25.48)	-0.624 (-14.65)
Number of industries covered	0.000 (0.03)	-0.000 (-0.16)	-0.000 (-0.10)	0.002 (0.90)	-0.311 (-2.23)	0.000 (0.08)
Firm-specific experience	0.010 (2.26)	-0.000 (-0.45)	0.003 (1.96)	0.008 (2.10)	1.009 (4.01)	0.008 (1.80)
Career experience	-0.009 (-3.15)	-0.000 (-0.91)	-0.003 (-3.44)	-0.009 (-3.40)	-0.533 (-2.70)	-0.009 (-3.08)
Firm size	0.002 (1.70)	0.000 (4.51)	0.019 (8.26)	0.011 (7.49)	0.005 (2.26)	0.012 (7.28)
Number of forecasts made						0.001 (2.08)
Number of firms covered						-0.001 (-0.50)
Number of countries covered						-0.002 (-0.50)
Constant	-0.052 (-3.50)	-0.004 (-4.69)	0.456 (21.73)	-0.132 (-7.93)	-0.009 (-0.41)	-0.147 (-7.83)
Number of observations	20,258	20,425	20,425	25,874	63,617	20,425
Adjusted R^2	0.070	0.010	0.037	0.048	0.101	0.041