Do U.S. Analysts Improve the Local Information Environment of Cross-Listed Stocks?

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Abstract

This paper examines whether and how U.S. analysts contribute to an improvement in the home market information environment of foreign firms cross-listed in the United States. Comparing return and trading volume reactions to U.S. analyst recommendation revisions to local analysts' for cross-listed stocks from 40 countries, we find strong evidence of a U.S. analyst location premium. We strengthen the identification of this effect by examining a subsample of analysts that move locations allowing us to isolate the effect of the location from unobserved differences in analyst, broker and firm characteristics. The U.S.-location premium to information production cannot be explained by a bonding or certification role of U.S. analysts or by higher U.S. investor demand for U.S. analyst services. Rather, we find evidence that U.S. analysts have an advantage in understanding U.S. GAAP reconciliations of cross-listed firms and that this advantage disappears with the adoption of IFRS.

Keywords: International cross-listing; analyst recommendations; location advantage; GAAP differences; IFRS; bonding hypothesis

JEL Classification: G14, G15, G24, G29, M40, O16

1. Introduction

Prior research documents a variety of economic benefits for foreign firms with a cross-listing in the U.S. Firms that cross-list experience a decline in the cost of capital (Errunza and Miller 2000) and exhibit higher market valuations around the cross-listing as well as in the long-term (Miller 1999; Foerster and Karolyi 1999; Doidge, Karolyi and Stulz 2004). The literature has explored various sources of these cross-listing benefits from improved liquidity (Lins, Strickland and Zenner 2005), enhanced shareholder protection and legal enforcement (Coffee 1999; Doidge et al. 2004), to improvements in the firm's information environment (Baker, Nofsinger and Weaver 2002; Lang, Lins, and Miller, 2003; Bailey, Karolyi, and Salva 2006). Lang et al. (2003), for example, document increases in analyst coverage and analyst forecast accuracy after firms cross-list in the U.S. While the prior literature emphasizes improvements in the information environment as an important factor in explaining the benefits of U.S. cross-listings, there is little direct evidence whether the increased coverage by U.S. informational intermediaries, such as equity analysts, improves the information environment and price discovery of the home market stock, and if so, how.

Prior studies on analyst geography (unrelated to cross-listings) find that distance to the firm's headquarter is negatively associated with forecast accuracy suggesting that local analysts have an information advantage compared to foreign analysts (Malloy, 2005; Bae, Stulz, and Tan, 2008). Applied to cross-listings these findings would suggest that any improvements in the local information environment that come with an increase in coverage by U.S. analysts do not stem from the production of better quality information by these analysts. On the other hand, U.S. analysts are likely better able to understand U.S. disclosure requirements and accounting measurements, in particular book values and earnings under U.S. GAAP and GAAP reconciliations required by foreign firms that cross-list on U.S. stock exchanges, and therefore might produce more valuable information than local analysts. If earnings and book values under U.S. GAAP are more value relevant than under local GAAP (Amir, Harris, and Venuti 1993;

Ashbaugh and Olsson 2002) and if U.S. GAAP earnings afford fewer opportunities for earnings management (Lang, Ready and Wilson 2006), U.S. analysts might be better able to predict earnings and perform valuations of cross-listed firms than local analysts.

Another alternative hypothesis is that U.S. analyst coverage increases the visibility of foreign firms to U.S.-based investors that otherwise exhibit a home bias (Bradshaw, Bushee and Miller 2004). A cross-listing opens local firms to more investors in the U.S., which increases the demand for the provision of analyst services for these stocks (Bae, Ozoguz, Tan and Wirjanto, 2012). If U.S. investors are more likely to follow U.S. analysts and also trade in the home market of the stock, home market prices might respond more strongly to information produced by U.S. analysts. In addition, various monitoring mechanisms improve with a cross-listing and U.S. analysts might facilitate this "bonding" mechanism as well as play a certification role for the home stock (Karolyi, 2006; Stulz, 1999). Thus, U.S. analysts' recommendations might be more informative than local analysts' because information production might be more stringently regulated in the U.S. than in the local market, or because Wall Street intermediaries command a higher perceived reputation alleviating informational and agency concerns of home market investors.

The role of U.S. analysts in contributing to the economic benefits of cross-listings thus remains largely unexplored. Consequently, in this paper we examine whether and how U.S. analysts contribute to an improvement in the home market information environment of stocks cross-listed in the United States. In particular, we are interested in understanding how information produced by U.S. analysts affects trading and information transmission in the home market of the cross-listed stock. To explore this, we examine the relative informativeness of U.S.-based analysts' recommendation changes compared to local analysts'. Specifically, we investigate stock return and trading volume reactions to analyst recommendation changes issued by local and U.S. analysts for international stocks from 40 countries cross-listed in the U.S. from 2003-2007.

We examine price and volume reactions as they allow us to identify information asymmetries and differential information processing among investors (Kim and Verrecchia, 1991, 1994). A price change at announcement of a recommendation change is proportional to the news in the announcement and the precision of the announcement. A volume change is proportional to the absolute price change and differential private information across traders. Thus, examining home market investors' reactions to U.S. analyst recommendation changes relative to local analysts allows us to test how investors perceive the precision of the U.S. analysts' signal. Exploring differences in abnormal trading volumes in the home market to U.S. analysts' recommendation changes compared to local analysts allows us to assess the relative impact of the information signal on home market traders' beliefs. A larger effect on volumes suggests the recommendation news of U.S. analysts is relatively more important to home market traders due to less precise private information or due to larger disagreement among investors about the precision of the U.S. signal compared to that of a local analyst.

Our main results show that recommendation changes by analysts based in the U.S. lead to significantly stronger abnormal return reactions in the home market of the cross-listed firm compared to those by local analysts, but that abnormal volumes are higher in the local market if recommendations are issued by local analysts. We do not find such a differential effect for other foreign analysts. We further find that the differential reaction to U.S. analyst recommendation changes is higher (and statistically more robust) for recommendation upgrades than downgrades. This result is consistent with the notion that agency costs might be higher for home market investors with respect to recommendation upgrades. If conflicts of interest are more pervasive between local analysts and local firms, which might mean that local analysts are more reluctant to issue downgrades or are more likely to issue upgrades for local firms, then investors will assign a higher U.S.-location premium to upgrades than downgrades.[1]

[1] Conflicts of interest could be more pervasive between local analysts and local firms if the local broker is more dependent on other business relationships with the firm compared to an international broker that has more diversified client relationships.

Our results are robust to controls for firm, analyst, broker and recommendation characteristics as well as in within-firm-analyst estimations. We find a statistically and economically significant premium of 2.71% on U.S. analyst upgrades, but no difference in the market reaction to downgrades. We further strengthen the identification of this effect by examining a subsample of analysts that move locations during our sample period and change from being a U.S.-located analyst to become local analysts or vice versa (and move within the same or across brokerage firms). This empirical strategy allows us to isolate the effect of the location from unobserved differences in analyst, broker or firm characteristics. The premium to U.S.-analyst recommendation upgrades persists within this subsample. The results suggest that cross-listed firms experience an improvement in the information environment of the home market with increased U.S. analyst coverage. The results further suggest that this improvement comes from a perceived higher quality of the information signals from U.S. analysts, which seems to outweigh the information advantage of local analysts documented in the prior literature.

We next investigate the source of the U.S.-analyst premium starting with possible explanations specific to cross-listed firms. First, we examine the hypothesis that U.S. analyst have an advantage understanding U.S. GAAP and GAAP reconciliations that were required by cross-listed firms during our sample period. We identify firms that elect to report under U.S. GAAP and those that reconcile their local GAAP results to U.S. GAAP. For those that report under their local GAAP we measure the difference between local GAAP and U.S. GAAP used in the prior literature. We find that the U.S. location premium is higher for foreign firms that report under U.S. GAAP and only exists for firms from countries with fewer differences between the local and U.S. GAAP. We further find that this advantage of U.S. analysts disappears once the cross-listing firms adopt IFRS suggesting that the adoption of high quality standards such as IFRS in the home country of the cross-listed stock creates a level playing field for U.S. and local analysts.

We then investigate whether the U.S.-analyst premium stems from a bonding or certification mechanism. Capital-markets-based accounting research has long emphasized changes in reporting and disclosure requirements that come with a cross-listing as first order effects on the valuation of the firm. Cross-listings are seen as strategic tools by managers, who cannot credibly convey information about the future prospects of the firm to shareholders, by helping them mitigate information and agency problems if the overseas market they cross-list on has higher disclosure and governance requirements (Karolyi, 2006). A cross-listing might thus be a credible way for a firm in a country with weak investor protection to commit to higher-quality governance by borrowing the investor protection of the country of the cross-listing (Doidge, Karolyi, and Stulz, 2007) and by exposing itself to stronger monitoring that is otherwise unavailable in the home market (Coffee, 1999, 2002). In addition to the stronger legal, governance and disclosure environment, Stulz (1999) highlights the role of "reputational intermediaries" such as securities analysts that may serve as a certification mechanism for the quality of the firm.

If the bonding hypothesis explains the U.S.-location premium for analyst recommendations, we expect to find the results to be stronger for firms that cross-list from countries with weak legal, governance or disclosure environments. We use various proxies that differentiate between the legal, governance and disclosure environments of the home countries. We find the opposite. Our findings are inconsistent with role of U.S. analysts in the bonding and certification hypothesis but are consistent with prior evidence that in weaker governance and information environments local analysts have an information advantage through more access to inside information (Bae et al. 2008).

The higher responsiveness to U.S. analysts could also be attributed a signaling role of intermediaries that lend their reputation to the cross-listing firm by marketing the firm to host country investors (Stulz, 1999). However, despite finding that U.S. analysts are more likely to work for more reputable brokers, we do not find any evidence that these differences in

reputation are incrementally informative. Instead, the findings that the U.S.-location premium for analyst recommendations is stronger for firms from more developed countries seems consistent with a U.S. investor demand effect. As U.S. investors are more likely to invest in countries that have a larger share in the world portfolio, i.e. developed countries (Bae, Bailey, and Mao, 2006), there is a larger demand for U.S. analysts covering firms in those countries resulting in more resources being devoted to information production for these firms. However, we find that the U.S. analyst premium is negatively associated with the percentage of US institutional ownership in cross-listed stocks.

Finally, we test several alternative hypotheses. One possibility is that U.S.-located analysts have an information timing advantage and on average issue recommendation changes earlier than local analysts. However, we do not find any significant differences in the timing of the recommendation changes between U.S. and local analysts. That is, U.S. and local analysts are equally as likely to be leaders as followers in making a recommendation change for a particular firm. We also do not find evidence that the results are due to different skill-sets of U.S. and local analysts.

Overall, our findings confirm that U.S. analysts improve the information environment of cross-listed stocks, but that this improvement does not stem from a bonding or certification mechanism or from a U.S. investor demand effect. Rather, the source of the U.S. analyst location premium seems to come from their advantage in interpreting U.S. GAAP and GAAP reconciliations reported by cross-listed firms. This skill (and perhaps resource) advantage of U.S. analysts seems to diminish with the adoption of IFRS standards.

Our study contributes to several strands of the international cross-listing and analyst literatures. A large literature in finance and accounting examines the economic consequences of cross-listings and argues that firms located in countries with weak legal protection and governance mechanisms can benefit from the stronger legal and governance environment of overseas markets through cross-listings (Reese and Weisbach, 2002; Doidge, 2004; Doidge,

Karolyi, and Stulz, 2004). The benefits in the form of lower information asymmetries and agency costs are suggested to arise by committing the firm to higher legal and regulatory standards and stronger enforcement of the overseas listing (Coffee 1999, 2002). Several studies also find an increase in institutional ownership in cross-listed firms as additional monitoring device (Edison and Warnock, 2004; Bradshaw, Bushee, and Miller, 2004). In addition, cross-listings are found to be associated with improvements in the information and trading environment of the firm (Baker, Nofsinger, and Weaver, 2002; Lang, Lins, and Miller, 2003; Karolyi, 2004; Fernandes and Ferreira, 2008). We contribute to this strand of the literature by showing that intermediaries play an important role in producing the benefits of an improved information environment and by providing evidence on the difference sources of this improvement. In addition, we contribute to the related literature on financial liberalization that finds that cross-listings are associated with the benefits of a larger shareholder base and improved information transmission (Foerster and Karolyi, 1999; Bae, Bailey, and Mao, 2006; Bae et al., 2012) by finding that information intermediaries in the country of the cross-listing facilitate trading in the home market, but that this does not primarily stem from responding to larger U.S. investor demand for intermediation services for cross-listed stocks.

Another strand of the literature in finance and accounting investigates the market reaction to analyst recommendation changes and generally finds these to be informative (Womack, 1996; Jegadeesh, Kim, Kirsche, and Lee, 2004; Yezegel, 2015). Several studies show, however, that geographical distance has a negative effect on the accuracy of analyst earnings forecasts suggesting that local analysts have an information advantage (Malloy, 2005; Bae, Stulz, and Tan, 2008). We contribute to this literature by finding that, for cross-listed firms, U.S. analyst have an advantage in understanding financial statement information filed with U.S. authorities, which seems to outweigh the documented local analyst advantage. This skill and resource advantage, however, seems to diminish when the cross-listed firms adopt IFRS in their home markets. The latter findings in this paper therefore also relate to the literature on US-GAAP

reconciliations and the effect of IFRS adoption (Ashbaugh and Olsson, 2002; Lang et al., 2006; Daske et al., 2008, 2013)

Finally, our study also contributes, albeit only on a descriptive level, to the literature that examines return co-movements and trading volumes in international stock markets (Halling, Pagano, Randl, and Zechner, 2008; Gagnon and Karolyi, 2009; Gagnon and Karolyi, 2010). We find that differential home-US return and volume reactions for cross-listed stocks stem from location differences of the information source (i.e., the analyst recommendation change).

Section 2 describes the data and research design. In section 3 we present our main results on the U.S. analyst location premium. Section 4 explores the sources of this premium and section 5 discusses alternative explanations and further robustness tests. Section 6 concludes.

2. Data and Methodology

2.1. Sample Selection

We obtain data on foreign stocks listed on the three major United States exchanges (NYSE, NASDAQ, Amex) between January 1, 2003 and December 31, 2007 from Thomson Reuters Datastream. We only consider depositary receipts (Level II and Level III ADRs) and direct (ordinary) listings. We exclude from the initial sample Level I ADRs, Rule 144A ADRs, Reg. S shares and stocks denoted as preferred shares, trust units or right issues.[2] In order to identify the final group of Home-U.S. stocks pairs we apply several criteria.

First, we match the parent stock (i.e., the home counterpart) to every ADR recorded in Datastream.[3] We then retrieve the International Securities Identification Number (ISIN) numbers of the ADR and the underlying stock and compare manually the codes and names with

[2] We focus on listed ADR programs (Level II and Level III ADRs) and direct listings and exclude unlisted programs (Level 1 and Rule 144 ADRs) as price and volume reactions of the latter might be affected by differences in liquidity and market microstructure as Level I ADRs are traded over-the-counter (OTC) and Rule 144 ADRs through Automated Linkages (PORTAL). Moreover, there are large differences in the information environment between the listed and OTC programme in terms of governance, disclosure and reporting standard requirements.

[3] We use a combination of various Worldscope and Datastream items (WC06116 *ADR non-US identifier security*, *QTEALL* and *QTDALL*) as well as manual matching to identify the primary (home stock) and secondary quotes (U.S. ADR or ordinary share) of each pair.

the main depositary banks' directories from Bank of New York Mellon, Citibank, Deutsche Bank and J.P. Morgan.[4,5]

For foreign firms that list in the form of ordinary programs we follow a similar procedure. We identify in Datastream all foreign firms (i.e., firms with a DS item *market* different from United States) listed as secondary quote on the NYSE, NASDAQ or Amex and obtain the ISIN codes of the home counterpart. We further identify the country of origin of the underlying stock and the local exchange market where the foreign stock is traded. We use the Citibank Global DR Directory, the Bank of New York Mellon Terminated DRs Directory and SEC 20-F fillings to ascertain the exact dates of the cross-listings on and delistings from the major markets.[6] Finally, we validate our pair-observations by cross-checking the name, country and U.S. exchange of cross-listed firms with the annual list of foreign companies registered with the SEC for each year from 2003 to 2007.[7]

In our sample we consider only pairs with daily closing price, stock returns, number of shares traded and number of shares outstanding available in Datastream for both the U.S. cross-listing and its local counterpart.[8] We exclude stocks with missing market data in one of the two markets and single-listed foreign firms (i.e., firms that only list on the U.S. exchange but not in their home country).

[4] Bank of New York Mellon DR Directory (http://www.adrbnymellon.com/dr_directory.jsp), Citi Bank Global DR Directory (https://depositaryreceipts.citi.com/adr/guides/uig.aspx?pageId=8&subpageID=34), Deutsche Bank DR Universe (https://www.adr.db.com/drweb/dr_universe_type_e.html), J.P. Morgan DR Universe (https://www.adr.com/Investors/Markets).

[5] Stock Exchange Daily Official List (SEDOL) numbers for the underlying stocks are also used. When the ISIN code of the ADR is missing in the Depositary Banks directories we use CUSIP number, convert it to its equivalent ISIN number and check it with the Datastream ADR's ISIN.

[6] Although Datastream maintains a record of inactive stocks, only the most recent status and exchange listing is kept, which could potentially lead to a misidentification for some stocks that are recorded as listed on one of the major U.S. exchanges, but are in fact upgrades from past over-the-counter Level 1 ADRs or Rule 144a listings during our sample period. Similarly stocks recorded as listed on OTC markets might have previously traded on the NYSE, Nasdaq or Amex at some point during our sample period. For example, German BASF SE (formerly BASF AG) was listed as ADR on the NYSE for seven years until September 5, 2007. The firm was then downgraded and continues to trade as OTC. Because the stock is still active as of June 2016, Datastream identifies its exchange market as OTC also for the *pre*-2007 period.

[7] https://www.sec.gov/divisions/corpfin/internatl/companies.shtml.

[8] Market data are obtained from Datastream using the adjusted unpadded option.

Datastream local market indices are used for each local stock listing as proxy for the national market portfolio. Effective issue and termination dates from the depositaries banks' directories and the Datastream items *BASE* and *TIME* are used to restrict our analysis just for the time period during which firms are listed simultaneously in the two markets (Home and U.S.). When an ADR or an ordinary program terminates, the local stock delists, or the ADR is downgraded to OTC we set the observations subsequently to missing values for both the U.S. and home series.[9]

The sample of Home-U.S. pairs is further restricted to firms with analyst recommendations data in the Institutional Brokers Estimate System (I/B/E/S) and firms with a valid I/B/E/S ticker for the ADR/ordinary shares or for the home country stock.[10] We remove duplicates and eliminate observations with anonymous analysts (I/B/E/S analyst code *amaskcd* equal to 0). These screens leave us with 550 cross-listed firms from 40 countries with 31,988 recommendation changes/reiterations issued by 4,783 analysts.

2.2. Analyst Location

For the above sample we identify the location of analysts and brokers. We include recommendations in our sample only if the geographical locations of the financial analysts and brokerage firms for which they work can be unambiguously determined. Using the I/B/E/S analyst code and the year of the recommendation issued by the analyst, we compare the name of the analyst in I/B/E/S with the information contained in the annual volumes of Nelson's Directories of Investment Research (2004-2008).[11] Each edition of Nelson's Directory published in year *t* uses analyst data (name, office address) as of November of the previous

[9] Consider the case of Allied Domecq Plc, a UK firm cross-listed on the New York Stock Exchange. The stock was upgraded from OTC to NYSE on July 31, 2002 and delisted on July 27, 2005 from London and New York after a takeover by Pernod-Ricard SA. The firm is therefore present in our sample only between the two dates (upgrade and delisting).

[10] As we obtained data on analysts' recommendations and earnings forecasts from two different vintages of I/B/E/S in 2011 and 2013, our data should not be affected by the biases documented by Ljungqvist, Malloy and Marston (2009) in I/B/E/S downloads obtained between 2000 and 2007. Since then I/B/E/S reported that the files have been purged from the main biases (e.g., alterations, deletions, additions and anonymizations of analysts and/or firms covered).

[11] We exclude I/B/E/S/ analyst codes that identify a team or group of analysts and concentrate our analysis on individual analysts.

year. The country location of analysts and brokers in year *t* is then obtained from the year *t+1* edition of Nelson's Directory.[12] We identify the geographical location (country and city) for 3,869 financial analysts (81% of the total) located in 44 different countries working for 422 brokers issuing a total of 28,453 recommendation changes/reiterations (89% of the total).

Finally, we classify each analyst and brokerage firm as local or foreign by comparing their geographical location with that of the cross-listed firm following Bae, Stulz, and Tan (2008). If the analyst is located in same country as the firm she covers, the analyst is identified as *Local*. By contrast if the analyst is located in a different country from the covered firm, the analyst is classified as *Foreign*. Analysts located in the United States (*U.S. Located*) are by definition foreign analysts. We use the same approach for brokerage firms. A broker is identified as *Local* if its headquarter is located is the same country as the cross-listed firm and *Foreign* otherwise. This specification allows us to identify if the analyst works at the broker's headquarters or in one of the subsidiaries abroad.

The broker location allows us to further classify a local analyst as *Pure Local* if she is employed by a local broker (i.e., headquartered in the same country as the covered firm) or as *Expatriate Local* (i.e., the local analyst works for a foreign broker). For completeness, we also divide the foreign analyst group into *Foreign_SR* and *Foreign_DR* by whether the foreign analyst is located in the same or in a different geographical region from the firm they cover. We provide summary statistics for the complete sample of cross-listed firms, analyst locations and recommendations in the next two sub-sections

2.3. Summary Statistics

The distribution of our sample firms across countries, industries, and analyst locations is presented in Table 1. Panel A of the table shows that Canada has the largest number of cross-

[12] We thank Hongping Tan for kindly providing us with his data on analyst and broker geographical locations to augment our hand-collected dataset. For a more detailed explanation on the matching procedure between the analysts data from I/B/E/S and Nelson's Directories see, among others, Malloy (2005), Bae, Tan, and Welker (2008) and O'Brien and Tan (2015).

listed firms (196), followed by the United Kingdom (57), Brazil (36), Japan (26), France and Mexico (21). The smallest number of cross-listed firms belongs to Austria, Belgium, Colombia, Hungary, Peru, Philippines, Sweden, and Turkey with only 1 firm per country with non-missing observations.

Local analysts issued 16,480 recommendations changes or reiterations and foreign analysts 11,973. The largest number of rating changes/reiterations is provided by pure-local analysts (10,895) followed by foreign analysts located in the same geographical region of the covered firms (8,286), expatriate local analysts (5,585) and foreign analysts in a different geographical region (3,687). *U.S.-Located* analysts account for 4,157 recommendation changes and reiterations.

In the far-right column of the table we report the respective number of analysts covering the cross-listed firms of a specific country of origin. The total number of analyst observations is 3,876 located in 44 countries. The sum of analysts following firms as pure local, expatriate local, and foreign (in the same or a different region) does not equal to the total number of analysts since a given analyst can follow more than one firm in more than one country and/or sector and can change location in a given year.

Canadian firms have the highest number of recommendations changes/reiterations in our sample (8,068) and the largest number of analyst observations (911) followed by firms from the United Kingdom (734), France (448), the Netherlands (366), and Germany (355). Firms in these countries also have a higher number of foreign analysts following than local analysts.

Panel B shows that on average our sample covers 436 cross-listed firms in the U.S. per year from 2003 to 2007 with a similar fairly equally distributed number of analysts and recommendation changes/reiterations over the sample years. The far-right column in the Panel shows that out of the 550 firms in our sample, more than 300 are present in all the years of our sample period.

2.4. Recommendation Statistics

Table 2 reports the number of recommendation changes and the magnitude of the change compared to the previous recommendation of the same analyst. I/B/E/S converts the recommendations of analysts to a standardized numerical five-point coding. We adopt the convention and reverse the score such that 5 = strong buy, 4 = buy, 3 = hold, 2 = underperform, 1 = sell. We compute recommendations changes/reiterations by comparing the current rating with the prior rating issued by the same analyst.

Rating changes that lie above the main diagonal (reiterations) are downgrades and ratings below the main diagonal are upgrades. Upgrades, downgrades and unchanged ratings account for 37%, 39% and 24% of the total 28,457 recommendations, respectively. The main ratings-change categories are downgrades from *buy-to-hold* (4,539 or 16% of the total), upgrades from *hold-to-buy* (4,252 or 15%), reiterations of prior *hold* (3,051 or 11%) and of prior *buy* (2,382 or 8%) and downgrades from *hold-to-underperform* (1,901 or 7%).[13]

Figure 1 summarizes the relative frequencies of rating changes conditional on prior recommendations. The Figure shows that a movement towards or from a subsequent *hold* rating represents nearly 50% of all the cases and that a prior *hold* rating on average gets upgraded to a *buy* with a 37.08% probability.

2.5. Methodology

We use a standard event-study methodology to calculate the average cumulative abnormal returns around a three-day event window [-1; +1] centered around the recommendation change/reiteration, both for the home and US market. For each cross-listed firm, we estimate excess returns using the market model of the respective market:

$$AR^{(H)}_{i,t} = R^{(H)}_{i,t} - \hat{\alpha}_i - \hat{\beta}_i R^{(H)}_{m,t} \quad (1)$$

$$AR^{(US)}_{j,t} = R^{(US)}_{j,t} - \hat{\alpha}_j - \hat{\beta}_j R^{(US)}_{m,t} \quad (2)$$

[13] In untabulated results, we find that the proportions of upgrades, downgrades, and reiterations are similar across different analyst locations.

$AR^{(H)}_{i,t}$ and $AR^{(US)}_{j,t}$ are stock *i*'s and US counterpart *j*'s (ADR or ordinary share) daily excess returns at time *t;* $R^{(H)}_{i,t}$ and $R^{(US)}_{j,t}$ are stock *i*'s and US counterpart *j*'s (ADR or ordinary share) daily returns at time *t;* $R^{(H)}_{m,t}$ and $R^{(US)}_{m,t}$ are the stock *i*'s corresponding Thomson Reuters Datastream (TRD) national stock market index (Datastream item *TOTMK*[*country_code*]) and the US counterpart *j*'s corresponding TRD US stock market index (Datastream item *TOTMKUS*) daily returns at time *t*.[14]

For each cross-listed firm, daily abnormal returns ($AR^{(H)}_{i,t}$ and $AR^{(US)}_{j,t}$) are cumulated from day *t* to day τ and mean domestic and foreign cumulative abnormal returns for a [t, τ] event window are then obtained by averaging the domestic and foreign cumulative abnormal returns corresponding to each recommendation change/reiteration category and analyst location.

Daily trading volumes are computed as $\ln[1 + n^{(H)}_{i,t}] / \ln[1+ S^{(H)}_{i,t}]$ and $\ln[1 + n^{(US)}_{j,t}] / \ln[1+ S^{(US)}_{j,t}]$, where $n^{(H)}_{i,t}$ and $n^{(US)}_{j,t}$ are the daily number of shares traded (Datastream item *VO*) for stock *i* and US counterpart *j* (ADR or ordinary share), respectively. Similarly $S^{(H)}_{i,t}$ and $S^{(US)}_{j,t}$ are the daily total number of shares outstanding (Datastream item *NOSH*) for stock *i* and US counterpart *j*. Abnormal trading volumes ($AV^{(H)}_{i,t}$ and $AV^{(US)}_{j,t}$) are calculated as the difference between the trading volumes of the stock *i* or the US counterpart *j* at time *t* ($V^{(H)}_{i,t}$ and $V^{(US)}_{j,t}$) and the average volume ($\overline{V^{(H)}_{i,t}}$ and $\overline{V^{(US)}_{j,t}}$) over a [-61, -2] and [+2, +61] estimation window (Womack, 1996):[15]

[14] See Campbell, Cowan, and Salotti (2010). The model parameters α and β are estimated over daily times-series OLS regressions on domestic and US market models using a [-121,-2] estimation window given by $R^{(H)}_{i,t,} = \alpha_{i,} + \beta_i R^{(H)}_{m,t} + \varepsilon_{i,t}$ and $R^{(US)}_{j,t,} = \alpha_{j,} + \beta_j R^{(US)}_{m,t} + \varepsilon_{j,t}$. Daily *log*-returns between day *t* and day *t*-1 are computed using the stock or market *cum*-dividend total return index (Datastream item *RI*) in local currency and in US dollars for stock *i* and US counterpart (ADR or ordinary share) *j*, respectively. We restrict our analysis to recommendations changes/reiterations events with sufficient daily return observations for the estimation window. We consider an event before June 18, 2003 only if the firm remains listed in the same markets in the previous 121 trading days. If the recommendation is issued on Saturday or Sunday we consider the first subsequent Monday as day 0 in the event window.

[15] We first apply a logarithmic transformation of volumes as suggested by Ajinkya and Jain (1989) such that $V^{(H)}_{i,t} = ln(1+ Vol^{(H)}_{i,t})$ and $V^{(US)}_{i,t} = ln(1+ Vol^{(US)}_{i,t})$, where $Vol^{(H)}_{i,t}$ and $Vol^{(US)}_{j,t}$ are stock i's and US counterpart j's (ADR or ordinary share) daily trading volumes.

$$AV_{i,t}^{(H)} = V_{i,t}^{(H)} - \overline{V_{i,t}^{(H)}} \quad (3)$$

$$AV_{j,t}^{(US)} = V_{j,t}^{(US)} - \overline{V_{j,t}^{(US)}} \quad (4)$$

Daily abnormal volumes ($AV^{(H)}_{i,t}$ and $AV^{(US)}_{j,t}$) are aggregated for each cross-listed firm from day -1 to day +1. We then average the domestic and foreign cumulative abnormal volumes analogous to abnormal returns to obtain mean domestic and foreign cumulative abnormal volumes over a [-1, +1] event window.[16]

3. The U.S. analyst location premium

3.1. Univariate comparisons

We begin our analysis with univariate comparisons of mean and median cumulative abnormal stock returns (CAR) and cumulative abnormal volumes (CAV) by analyst location and direction of recommendation change. We are interested in the effects on the information environment in the local market. In untabulated results we find that analyst recommendation changes are equally informative in the local and U.S. market, but that abnormal trading volumes are higher in the home than in the U.S. market suggesting that the information signals from analyst recommendation changes are relatively more important in the home market.[17] This might be due to larger disagreement or less precise prior information among investors, i.e., higher information asymmetries, in the home market. We are interested to what extent U.S. and local analysts contribute to reducing these information asymmetries.

[16] In untabulated results we find that recommendation changes generate significant excess returns both in the home and U.S. markets. Home (U.S.) mean market reactions following upgrades and downgrades are 1.07% (1.06%) and -1.65% (-1.68%), respectively, and statistically significant at 1%-level. This initial evidence confirms that—consistent with the prior literature—recommendations changes are informative and that downgrades convey a stronger signal to markets (e.g., Womack, 1996).

[17] Recommendation changes on average elicit similar market responses in the home and U.S. markets as the mean and median differences between the 3-day cumulative abnormal returns in the home and U.S. markets are not statistically different from zero. These results hold for any magnitude of the ratings change as well as on average across upgrades and downgrades. The evidence is consistent with the law of one price. We do however find higher excess trading volumes in the home market than in the U.S. market. The mean (median) differences for upgrades and downgrades are both statistically different from zero at 1.33% (2.28%) and 1.13% (2.53%), respectively.

Table 3 reports CARs and CAVs in the home market of the cross-listed stock conditional on the location of the analyst (i.e., whether U.S.-based or local). Results are presented separately for upgrades and downgrades. We further divide the *Local* group into *Pure Local* and *Expatriate Local* analysts. The top panel in the table reports CARs and CAVs to upgrades and downgrades by location of the analyst and the bottom panel reports the differences in means. The first row in the table shows that upgrades by analysts located in the United States generate mean cumulative abnormal returns of 1.89% (p-value<0.001) and mean cumulative abnormal volumes of 7.26% (p-value<0.001). Similarly, downgrades by U.S analysts generate mean CARs of -2.51% (p-value<0.001) and mean CAVs of 10.26% (p-value<0.001).

On the other hand, upgrades and downgrades issued by *Local* analysts lead to a more muted, but still significant, market reaction with the mean CARs being 1.06% (p-value<0.001) for upgrades and -1.65% (p-value<0.001) for downgrades. The CAVs to local analyst recommendation changes are slightly higher for upgrades at 8.62% (p-value<0.001) and slightly lower for downgrades at 9.99% (p-value<0.001) compared to those by U.S. analysts. We find similar results when disaggregating local analysts into *Pure Local* and *Expatriate Local*.

The bottom panel in Table 3 reveals that these differences in mean CARs between U.S.-located and local analysts are statistically and economically significant at 0.83% for upgrades and at -0.86% for downgrades (p-values<0.01). The pattern is similar when we disaggregate the *Local* analysts into *Pure Local* and *Expatriate Local*. Differences in CARs between *U.S.-located* and *Pure* (*Expatriate*) *Local* analysts are 0.85% (0.79%) for upgrades and -0.79% (-1.16%) for downgrades. These results suggest that home market investors react more strongly to recommendation changes coming from U.S.-based analysts compared to local analysts.

The tests of differences in CAVs reveal significantly higher abnormal trading volumes to recommendation upgrades by *Local* (and *Pure Local*) analysts compared to *U.S-Located* analysts with -1.34% (-1.78%) and no significantly different abnormal trading volumes to

recommendation downgrades except for downgrades by *U.S.-located* compared to *Expatriate Local* analysts (1.74%, p-value<0.05).

Overall, the results reveal that recommendation changes by *U.S.-Located* analysts are more informative to home market investors than recommendation changes by *Local* analysts. In addition, investors perceive the information signal contained in upgrades to have higher precision when coming from a U.S. analyst (as suggested by the relatively lower abnormal volumes), whereas there are no notable differences in the perceived quality of downgrade signals between U.S. and (pure) local analysts. The prior literature offers a possible explanation for the latter result suggesting that analysts might be reluctant to downgrade firms due to conflicts of interests related to their broker's other business relationships with the firm. If investors perceive these conflicts to be more pervasive between local analysts and (local) firms than between U.S. analysts and these firms, they are more likely to assign a lower quality to an upgrade signal by local analysts compared to U.S. analysts, but might not discriminate between downgrades (or potentially even perceive downgrades by local analysts as more informative).

3.2. Cross-sectional regressions

The univariate results in Table 3 suggest that a *U.S.-Located* analyst's recommendation revision has incremental information value for the home market stock compared to a recommendation change by a local analyst based in the home country of the stock; or in other words, home market investors assign a premium to recommendation changes by *U.S.-Located* analysts.

To further investigate this U.S. analyst premium in a more robust multivariate setting we next estimate pooled cross-sectional regressions, using the announcement CARs as dependent variables, on our main variable of interest *U.S. vs (Pure/Expatriate) Local*, which is a dummy variable that takes the value of 1 if the recommendation change is issued by a *U.S.-Located* analyst and 0 if issued by a (*Pure/Expatriate) Local* analyst. The model is estimated as follows:

$$CAR_{[-1,+1],i} = \alpha_i + \beta_1 \, U.S \; vs. \; Local \; + \sum \beta_k \, Controls + \varepsilon_i \qquad (5)$$

The control variables include analyst, broker, recommendation and firm characteristics based on findings in the prior literature and also year, firm and analyst fixed effects. Standard errors are clustered by analyst and the regressions are estimated separately for upgrades and downgrades.

We control for the analyst's experience measured as the number of years since the analyst first appeared in the I/B/E/S database (*Analyst General Experience*) and the difference of the number of years the analyst has covered the firm compared to all other analysts that covered the firm (*Analyst Firm Experience*), the number of firms the analyst follows (*Number Firms Followed)*, as well as the size (*Broker Size*) and reputation (*Broker Reputation*) of the broker.

We further control for the potential confounding effects of firm and earnings news highlighted by the prior literature (Altinkilic and Hansen, 2009; Li, Ramesh, Shen, and Wu, 2015). *Pre (Post)-Earnings* are dummy variables equal to one if the recommendation change is issued in the two weeks before (after) an earnings announcement. *Concurrent Earnings Forecast* is equal to one if the recommending analyst issued an EPS revision for the stock in the three-day window around the recommendation change and the estimate was revised in the same direction as the recommendation change.[18]

Stickel (1995) notes that downgrades that skip one category change generate, at least in the short term, a significantly higher market reaction. Untabulated results confirm that 2, 3 and 4-point changes generate higher cumulative abnormal returns than 1-point category change and that the results are stronger for downgrades compared to upgrades. It is conceivable that U.S. analysts are significantly more likely to issue recommendation changes by more than one point compared to local analysts contributing to the higher magnitude in the market reaction.[19] We

[18] We retrieve data on individual analyst's one-year ahead earnings per share (EPS) estimate from I/B/E/S by using the U.S. and International Detail Earnings Estimate History. We adopt the same selection criteria as with the recommendations in defining the sample of EPS estimate revisions/reiterations. For the final sample of 550 cross-listed firms we merge the information drawn from the two I/B/E/S Detail Earnings Estimate files and identify a sample of 128,507 forecast revisions and reiterations of prior forecasts. EPS estimate revisions/reiterations are defined as the current estimate for one-year-ahead EPS minus the prior estimate by the same analyst.

[19] A t-test, however, reveals that the mean absolute recommendation change of U.S. analysts is significantly lower than that of local analysts at the 0.01%-level (t = -6.70).

therefore control for the magnitude of the recommendation change (*Abs. Recommendation Change*).[20]

To control for firm-characteristics we add the following variables: *Size* is the domestic market capitalization; *Book-to-Market* of equity; *turnover* is the domestic average daily trading volume over the 63 days prior to the recommendation change; *Prev1M* is the domestic stock return over the 21 trading days prior to the recommendation change/reiteration; *Prev1Y* is the domestic stock return over the prior 252 trading days prior to the recommendation change, excluding the 21 trading days prior to the recommendation change; *Analyst Coverage* is the total number of analysts covering the firm in the year of the recommendation change. We describe all variables in the Appendix.

The regression results are presented in Table 4. Columns (1) to (6) in Table 4 show the results for upgrades. Consistent with Table 3, we find that upgrades by *U.S.* analysts outperform upgrades by *Local, Pure Local and Expatriate Local* analysts by a statistically and economically significant 0.82%, 0.94% and 0.90% (Columns 1-3) over the three-day announcement window, respectively.[21] Column (4) repeats the main regression with year, and firm fixed effects; column (5) shows results with year, firm and analyst fixed effects, and column (6) with year and firm-analyst pair fixed effects. In all three regressions the market reaction to *U.S.* analyst recommendation upgrades remains economically significantly higher (0.50%, 2.06% and 2.72%, respectively) than to *Local* analyst recommendation upgrades, controlling for observed firm, broker, analyst, and recommendation characteristics and unobserved (constant) firm, analyst and firm-analyst pair heterogeneity. The results in Column 6 suggest that within the same firm-analyst pairing recommendation upgrades by a *U.S.* analyst

[20] For example, going from a hold (=3) to a buy (=4) the variable will have a value of one, going from hold (=3) to sell (=1) the variable will have a value of 2, an unchanged rating will have a value of zero, and so on.
[21] A Chi-square test reveals that the coefficients on the *Pure Local* and *Expatriate Local* dummies are not significantly different from each other (Chi^2=1.09, p=0.30).

result in an economically significant 2.72% higher market reaction than recommendation upgrades by the same analyst for the same firm when located in the home country of the stock.

Columns (7) to (12) report the results for downgrades. Again, consistent with Table 3, we find that downgrades from *U.S.* analysts elicit higher (in magnitude) market reactions than downgrades by *Local, Pure Local and Expatriate Local* analysts by a statistically and economically significant -1.10%, -1.07% and -1.37% (Columns 7-9), respectively.[22] Columns (10)-(12) report results of the main regression with year and firm fixed effects, year, firm and analyst fixed effects and year and firm-analyst pair fixed effects. In column (10) the market reaction to *U.S.* analyst recommendation downgrades is weakly significantly lower by -0.40% than to *Local* analyst recommendation downgrades. The coefficients are not statistically significant in Columns (11) and (12).[23]

Overall, the results in Table 4 confirm that recommendation changes by *U.S.* analysts are more informative for home market investors than recommendation changes by local analysts. These findings are economically and statistically significant for upgrades and robust to the inclusion of various observable firm, analyst and broker characteristics as well as fixed effects, but weaker for downgrades.

3.3. Do unobserved analyst and broker characteristics explain the results?

Despite the inclusion of various analyst and broker characteristics and estimation within analyst-firm pairings in Table 4 it is possible that the results are due to unobserved analyst and broker characteristics that change over time that influence the perceived value of U.S.-located analyst recommendation changes relative to their local counterparts.[24] We therefore next

[22] A Chi-square test reveals that the coefficients on the *Pure Local* and *Expatriate Local* dummies are significantly different from each other (Chi^2=2.92, p=0.09).

[23] We also estimate the regressions for upgrades and downgrades for each recommendation change category (1-4) separately. The results remain unchanged for the first two categories 1 and 2, but are statistically insignificant for categories 4 (for upgrades) and 3 and 4 (for downgrades) possibly because of the lower power due to only little more than 100 observations for each of the latter categories.

[24] For example, the analyst might receive more training in the U.S. office of the bank, might change offices to a more prestigious broker with more resources, or might benefit from information spillovers from other parts of the broker in the U.S.

examine the informativeness of recommendation changes within a sub-sample of analysts that move from the home market of the firm to the U.S. or from the U.S. to the home market of the firm they cover, i.e., the *U.S. vs Local* dummy variable switches from 0 to 1 or from 1 to 0 within the subsample of analyst movers. We identify 74 analysts that move to and from the U.S. at least once during our sample period.

Table 5, Panel A presents the results. The regressions include the same control variables as before. The coefficient on *U.S. vs Local* remains statistically significant for the subsample of upgrades with and without the inclusion of different fixed effects but is insignificant for the subsample of downgrades confirming the results of Table 4. The results suggest that an upgrade from the same analyst for the same firm leads to an almost 2.5% higher market reaction when the analyst issues the upgrade when based in the U.S. compared to when based in the home country of the firm (Table 5 Panel A, column 4).

The preceding analysis does not distinguish whether the analyst is moving to another broker when moving location. We investigate whether the results are sensitive to moves within or across brokers by further dividing the subsample of moving analysts into those that at the same time of the change in location also move to another broker and those that stay with the same broker and only change their office location. Focusing the analysis on this subsample allows us to hold analyst (and broker) characteristics fixed in order to isolate only the effect of the location change on the informativeness of the recommendation change.[25]

Table 5, Panel B presents the results of this analysis. The Panel reveals that for the subsample of upgrades the U.S. premium persists within and across broker moves. The coefficient on *U.S. vs Local* remains significantly positive at 2.21% when analysts move location but remain with the same broker. The magnitude of the coefficient is, however, almost double (4.35% compared to 2.21%) when the analyst moves broker at the same time of moving

[25] For example, if a German analyst working for Deutsche Bank that covers a German firm cross-listed in the US, moves to the New York office of Deutsche Bank and continues to cover the same German firm, we observe the change in location of the analyst while all other characteristics (firm, broker and analyst) remain constant.

location. The coefficient on *U.S. vs Local* for the subsample of downgrades is also weakly significantly negative for analysts that move to different brokers compared to an insignificant coefficient for downgrades from analysts that move within brokers. The results suggest that the U.S. location premium is about 2% for recommendation upgrades when holding fixed firm-analyst and broker characteristics. The results also seem to point to a U.S. broker premium of about 2%. One has to caution the interpretation of the results, however, as the identification of the effect in these tests comes from a small subset of location-changing analysts.

One possible explanation for our results is that investors perceive U.S. analysts to be more skilled, i.e., that their recommendations are of higher quality. Although, our research design controls for time-invariant differences in analyst, firm and broker characteristics, it is possible that our results are driven by time-varying changes in analyst characteristics that are correlated with the location-change. For example, analysts might gain skills when they move to the U.S. or more skilled analysts self-select to move to the U.S. because they are rewarded better for those skills. As a proxy for analyst skill we therefore further examine whether U.S. analysts have lower earnings forecast errors compared to local analysts. We follow Bae, Stulz and Tan (2008) and measure the proportional mean absolute forecast error for each analyst *i* forecasting fiscal year earnings *t* of firm *j* using the last available forecast before the fiscal year end (see Table 2 in Bae et al. 2008 for a more detailed definition). In untabulated results, we find some evidence that U.S. analysts issue more precise forecast. However, once we control for firm and analyst fixed effects we do not find any significant difference in forecast errors between U.S. and local analysts.

Overall, our main results in this section show that for cross-listed stocks in the U.S. recommendation changes, particularly upgrades, made by U.S.-located analysts carry a premium in the local market compared to recommendations changes by local analysts. Our findings suggest that there are other effects specific to cross-listed stocks that outweigh the information advantage of local analysts that might stem from their geographical and cultural

proximity as previously documented in the literature (e.g., Malloy 2005; Bae et al. 2008). We next investigate several potential explanations for our findings.

4. What explains the U.S. location premium?

In this section we investigate three hypotheses leading to cross-sectional predictions that might explain the documented effect of a U.S. location premium for analyst recommendation changes.

4.1. GAAP differences and IFRS adoption

It is likely that U.S. analysts have more knowledge about U.S. GAAP than local analysts and thus are better able to interpret financial information of firms from countries with domestic accounting standards more similar to U.S. GAAP. Bae, Tan and Welker (2008), for example, find a negative relation between GAAP differences and foreign analysts forecast accuracy. Moreover, prior research suggests that earnings and book values under U.S. GAAP are more value relevant than under local GAAP (Amir, Harris, and Venuti 1993; Ashbaugh and Olsson 2002) and that U.S. GAAP earnings are more informative by allowing less opportunities for smoothing and earnings management (Land, Ready and Wilson 2006). During our sample period foreign firms that cross-list in the U.S. were required to either file their financial statements in accordance with U.S. GAAP or if they continued to use their local GAAP to reconcile the financial information to U.S. GAAP.[26] Hence, U.S. analysts might have an information advantage with respect to understanding book values and earnings under U.S. GAAP and GAAP reconciliations. We therefore expect the U.S. location premium to be higher when the foreign firm voluntarily reports under U.S. GAAP or when there are fewer differences between the local and U.S. GAAP.

[26] The SEC only in 2008, after the end of our sample period, allowed foreign firms also to submit financial statements that conform to IFRS as adopted by the IASB, without the need for reconciliations to U.S. GAAP.

Furthermore, our sample period covers a period when many countries started to adopt IFRS for listed companies. To the extent that IFRS increases the comparability of financial information and the predictability of earnings and thus produces financial statement information of similar quality to U.S. GAAP, it levels the playing field for local and foreign analysts (Ashbaugh and Pincus 2001; Leuz 2003). As a consequence, U.S. analysts might lose their advantage of a better understanding of U.S. GAAP reconciliations. As domestic financial statements become more comparable to U.S. GAAP with adoption of IFRS, local analysts become better trained in interpreting financial statement information produced under U.S. GAAP as well. If this is the case, the U.S. analyst premium should weaken or disappear after cross-listed firms adopt IFRS. In addition, prior evidence suggests that IFRS adoption has a positive effect on the forecasting skills of European sector-specialist analysts potentially further contributing to an increase in informativeness of local analysts compared to U.S. analysts (Beuselinck, Joos, Khurana and van der Meulen, 2017).

To empirically test these hypotheses, we partition our sample along three variables. First, we measure the difference of local GAAP with U.S. GAAP for each country in our sample. Second, we identify among our sample of cross-listed firms those that report financial statements under U.S. GAAP, and third we identify those firms that have voluntarily or mandatorily adopted IFRS during our sample period. To measure the differences between local GAAP and U.S. GAAP we use the modified scores developed in Wang and Yu (2015) based on Bae et al. (2008), who manually compare the accounting treatment of 21 accounting items under each country's local GAAP with their treatment under U.S. GAAP. Each country receives a score of one for each item that differs in its local GAAP treatment compared to the U.S. GAAP treatment with the total GAAP difference being the sum of all 21 scores (see Wang and Yu 2015, Table 2). The higher the score the larger the difference between the local GAAP and U.S. GAAP. We partition our sample into *HIGH* and *LOW* GAAP difference using the median score.

To identify U.S. GAAP and IFRS reporting firms we match our sample with data provided by Daske, Hail, Leuz and Verdi (2013) who, in addition to using classifications available in Worldscope and Compustat, manually review annual reports to classify firm-year observations as IAS/IFRS, U.S. GAAP, or local GAAP (see Daske et al 2013, Appendix).[27] The authors not only identify mandatory adoption of IFRS on the country level (in most countries in 2005), but also identify when firms have voluntarily adopted IFRS before the mandatory adoption date. Their data allows us to partition our sample into firm-years that report under U.S. GAAP and those that report under IFRS.

Table 6 reports the results of these cross-sectional tests. Column (1) shows the coefficient on the *US vs Local* dummy partitioning the sample by *LOW* and *HIGH* GAAP difference, column (2) summarizes the results for firms that report under U.S. GAAP and those that report GAAP reconciliations, and column (3) for firm-years before and after IFRS adoption. All regressions include the same control variables as in the previous section and fixed-effects as denoted in the table.

The results in column (1) reveal that the U.S. analyst premium only exists for firms that cross-list from countries with a low GAAP difference (coefficient = 3.09%, p-value<0.05), whereas for firms from countries with a high GAAP difference investors expect local analysts' recommendation changes to be more informative (coefficient = -1.86%, p-value<0.05). Consistent with these findings the results in column (2) show that U.S. analysts command a higher premium for recommendation changes made for firms that report under U.S. GAAP. We caution, however, with the interpretation of the coefficient magnitudes as there are relatively fewer cross-listed firms that report under U.S. GAAP allowing a larger influence of individual firms on the mean coefficient. The results in column (3) further confirm that the adoption of IFRS created a level playing field. While the coefficient on the *US vs Local* dummy is 1.88%

[27] We thank the authors for making their data available in their online supplement at https://research.chicagobooth.edu/arc/journal-of-accounting-research/online-supplements#simple5

(p-value<0.05) in the firm-years under local GAAP, it turns negative to -2.09% and marginally significant (p-value<0.1) suggesting that investors perceive local analysts' recommendation changes equally, if not more, informative under IFRS.

Overall, the findings in this section suggest that the U.S. analyst location premium stems from an advantage in understanding U.S. GAAP conform and reconciled financial statement information of firms cross-listed in the U.S. However, we also find that the advantage disappears with firms' adoption of IFRS suggesting that the U.S. advantage does not (solely) come from the increased transparency and likely lower discretion to manage earnings that is associated with high-quality accounting standards such as U.S. GAAP compared to local GAAP. Rather, it seems to be related to U.S. analysts' ability (and the resources afforded to them in U.S.-based brokerage houses) to analyze and interpret U.S. GAAP information.

4.2. Bonding and certification effect

A related hypothesis why U.S. analysts' recommendation changes are more informative to local market investors compared to local analysts' is that the effect is driven by firms that cross-list in the U.S. from countries with weaker investor protection, corporate governance mechanisms and reporting and disclosure environments. Through a cross-listing firms from countries with weaker legal environments are able to bond themselves to higher standards of investor protection in the U.S. (Coffee, 1999, 2002). Stulz (1999) highlights an important role of intermediaries in the bonding hypothesis: Analysts based in the U.S. add further scrutiny and monitoring for the home stock as information production might be more stringently regulated in the U.S.—and thus their recommendations might be perceived as more informative than those of local analysts. Moreover, if these analysts are employed by highly reputable investment banks they may further play a certification role for the cross-listed stock (Stulz 1999, Karolyi 2006).

Generally, the improvement of the information environment that comes with a cross-listing (Fernandes and Ferreira 2008) should be stronger for firms from countries with weak

information environments. Furthermore, local market investors might pay more attention to information produced by US-located intermediaries due to perceived higher reliability of the information, higher accuracy, and potentially fewer conflicts of interests. If the bonding and certification hypotheses explain our findings we would expect our results to be stronger for analyst recommendation changes that are issued for firms from countries with weak investor protection, governance or disclosure environments. We therefore repeat our main regressions distinguishing our sample by the socio-economic, legal and political, regulatory and governance, and reporting and disclosure environment of the home country of the cross-listed firm. We measure the effect by interacting the particular country characteristic with our main variable of interest *U.S. vs Local*.

Table 7 reports the regression results. The table shows in each row the coefficient and t-statistic for our main indicator *U.S. vs Local*, the particular country characteristic and their interaction effect for each regression. All other control variables and year fixed effects are suppressed for ease of exposition. Variable definitions are provided in the appendix. If the certification hypothesis holds we should observe a positive coefficient on the interaction effect for upgrades and a negative coefficient on the interaction effect for downgrades. We predominantly find the contrary.

For example, in the first row of Table 7 we report results distinguishing by whether the home country of the cross-listed firm is an advanced economy (country characteristic indicator = 1) or an emerging economy. The coefficient on the interaction effect shows that the differential market reaction to US-located analyst recommendation changes compared to local analysts is larger when the cross-listed firm is from an advanced economy (coefficient on the interaction effect = 0.90, p-value<0.05). We find similar results using proxies for the rule of law, accountability, and government effectiveness as well as the regulatory quality, corruption control and disclosure environment of the country. Depending on the proxy used we either find no difference in the premium for recommendation changes by U.S. analysts across countries

(interaction effect is not statistically different from zero) or find a higher premium for countries with the stronger legal, regulatory or disclosure environment (interaction effect is significantly positive for upgrades and negative for downgrades).

Overall, our findings suggest that recommendation changes by U.S. analysts are significantly more informative for firms from countries with stronger legal, regulatory and disclosure environments. These results are somewhat consistent with the results in the prior section that the U.S. analyst premium is positively associated with reporting similarity to the U.S. However, the results are inconsistent with the bonding or certification hypothesis.

4.3. U.S. investor demand

Next, we examine a potential U.S. investor demand effect. Foreign firms usually cross-list on U.S. stock exchanges and bond themselves to higher disclosure standards and stricter investor protection in order to attract larger investments from U.S. investors. If U.S. investors demand U.S. analysts' services and analysts based in the U.S. have better connections to U.S. investors, stock prices of cross-listed firms with a higher fraction of U.S. investor ownership should be more responsive to information produced by U.S. analysts than by local analysts.

It is important to note that the cross-sectional prediction with respect to the country governance and disclosure characteristics are the opposite to the bonding hypothesis discussed above as U.S. investors are more likely to invest in countries that have a larger share in the world portfolio. These countries are generally more developed and therefore tend to be the ones that are stronger on governance and disclosure characteristics. If investor demand is higher for firms in these countries, there is likely a larger demand for U.S. analysts' services resulting in more resources of U.S. intermediaries being devoted to these firms producing better information and in turn more responsive stock returns. This interpretation is consistent with findings in Bae, Bailey and Mao (2006) and Bae, Ozoguz, Tan, and Wirjanto (2012) that the openness of

countries to foreign investors is correlated with a better information environment and more responsive stock returns.[28]

Table 8 summarizes the results of regressions for recommendation upgrades in which we interact our main variable of interest, *US vs Local*, with the percentage of U.S. institutional ownership holding in the cross-listed stock collected from ThomsonReuters Eikon. The regressions use the same control variables and fixed effects as denoted in the table. The results are inconsistent with the U.S. investor demand hypothesis. The coefficient on the interaction effect is significantly negative throughout different specifications. For example, using year and firm-analyst fixed effects (column 4) the coefficient is -0.09% (p-value<0.01) while the coefficient on the *US vs Local* main effect is 5.21% (p-value<0.01). The results suggest that the U.S. analyst premium is larger for stocks with a *lower* percentage of U.S. institutional ownership.

5. Alternative explanations and robustness tests

In this section we further investigate several alternative explanations and test the robustness of our main results. In particular, we assess whether the timing of the recommendation changes or differences in the organization of analyst research might explain our findings.

5.1. Do U.S. analysts issue more timely recommendation changes?

It is conceivable that U.S.-based analysts on average issue more informative recommendation changes due to being the leader in making a recommendation change that local analysts follow. That is, any market moving information might already be public with the first

[28] However, the above interpretation would mean that US investors trade more in the home market of the stock instead of the equally liquid ADR or that trading in the U.S. in response to the U.S.-analyst recommendation changes spills over to the home market. Untabulated results on abnormal volumes in the two markets are somewhat inconsistent with such explanation although not strong evidence against it. Abnormal volumes are significantly lower in the home market in response to a U.S.-located analyst recommendation change compared to that of a local analyst, while abnormal volumes are significantly higher in the U.S. in response to a U.S.-located analyst recommendation change.

recommendation change for the firm, which happens to be one from a U.S. analyst, while local analysts piggy back on the recommendation change. U.S. analysts might be first mover in making recommendation changes because they might be faster in processing firm-specific or industry information, might work for brokerages that have better access to inside information of firms they follow, or because international firms may tend to disclose information when their respective home markets are closed, but the U.S. market is still open giving U.S. analysts a timing advantage in preparing their recommendation changes.

To investigate this potential explanation for our results we examine the relative timing of the recommendation changes for U.S. and local analysts. For this we create an indicator variable *Follower* equal to 1 if an analyst's recommendation change is in the same direction and by the same magnitude as a previous recommendation change from a different analyst for the same firm within a 30-day period. Analogously, *Follower* is equal to zero, if the recommendation change is different in magnitude or direction from a previous recommendation change for the same firm made by other analysts during the previous 30 days.

Table 9 Panel A on the left reports the contingency table between *U.S. vs Local* and *Follower.* Of the total of 16,473 recommendation changes by local analysts 2,820 (17.12%) are changes that have followed other analysts recommendation change announcements (*Follower* = 1). This compares to 738 U.S. analyst recommendation changes as followers from a total of 4,157 US-based analysts (17.75%). That is, conditional on being a U.S.-based analyst, the likelihood of also being a follower is slightly higher, not lower. This difference in frequencies, however, is not statistically significant ($\chi^2 = 0.94$).

We further include the indicator variable *Follower* in our main regressions on recommendation upgrades and also interact the variable with our main variable of interest *U.S. vs Local.* The results are shown in Table 9, Panel B columns (1) and (2). The coefficient on *U.S. vs Local* remains statistically significant at -2.53%. More interestingly, neither the coefficient on *Follower*, nor the interaction effect are statistically different from zero suggesting

that the differential informativeness of U.S. analysts is unlikely explained by them being the first to change the recommendations and local analysts being the followers.

5.2. Does analyst specialization matter?

Sonney (2009) and Salva and Sonney (2011) argue that brokerage houses organize their research along country and economic sectors and find that earnings forecasts and recommendations are relatively more informative from analysts with country-specific knowledge compared to sector-specialized analysts. It is thus possible, that the information advantage of U.S. analysts in our sample comes from them being predominantly country-specialized. Sonney (2009) shows that the information advantage of country-specialized analysts stems from the geographical proximity between the analyst and the firm as well as from superior knowledge of country-specific factors.

Our findings that U.S.-based analysts issue more informative recommendation changes compared to local analysts stand in contrast to the proximity argument as local analysts are per definition always located closer to the firm than U.S. analysts. However, it is conceivable that the advantage of having country-specialized knowledge outweighs geographical proximity. We therefore follow Sonney (2009) in classifying each analyst observation in our sample as coming from a country or sector specialist.[29] Table 9, Panel A on the right-hand side reports the contingency table between *U.S. vs Local* and *Country Specialist* and reveals that U.S. analysts are significantly less likely to be country-specialists. Of the total of 1,811 recommendation changes by U.S. analysts only 292 (16.12%) are from country-specialist, while 4,967 of the total of 8,005 local analyst recommendation changes (62.05%) come from country-specialists. That is, conditional on being a U.S. analyst, the likelihood of also being a country-specialist is significantly lower. This difference in frequencies is highly statistically significant ($\chi^2 = 1300$).

[29] We allow for analysts to move between categories e.g., when they move brokerages or locations. For this particular analysis we disregard analysts that according to Sonney's (2009) methodology can neither be classified as country or sector specialists. Including this third category in our analysis does not change our inference.

Consistent with the contingency table, the regression results in Panel B columns (3) and (4) show that conditioning on being a country-specialist does not affect the U.S. location premium. The coefficient on *U.S. vs Local* remains statistically significant at -4.23% for the subsample of upgrades and the interaction effect with the country-specialist indicator variable is insignificantly different from zero. These results suggest that the U.S. location premium is unlikely explained by analyst specialization.

5.3. Further robustness tests

We further investigate whether investors over-react to U.S. analysts' recommendation changes, or equally under-react to local analysts' recommendation changes. If the incremental informativeness of U.S. analysts is explained by an over-reaction of home market investors to U.S. analysts' news or an under-reaction to local analysts' recommendations, we should observe a (partial) reversal of the event-window effect over longer event horizons after the event date. In untabulated results we do not find evidence of a reversal of the effect over 5 days, 1 month or 3 months post-announcement of the recommendation changes for upgrades or downgrades.

We also test the robustness of our results controlling for the geographical distance and conditioning our sample on broker reputation. Our findings that U.S. analysts' recommendation changes are more informative than local analysts is somewhat contrary to Bae, Stulz, and Tan (2008) and Malloy (2005) who find and inverse relationship of forecasting quality and geographical distance between analyst and firm headquarters. Although U.S. analysts will per definition in almost all cases be located further away from the firm than local analysts, it is possible (although unlikely) that for some Canadian or Central and South American firms the U.S. analyst is physically located closer. We therefore test the effect of the distance by controlling for the proximity of the analyst to the headquarters of the firm measured as a direct distance in kilometers. In untabulated results we do not find any evidence that the geographical distance materially changes our inference.

Lastly, we condition our main regression based on broker reputation to further assess whether the U.S. analyst location premium can be explained by a certification effect stemming from U.S. analysts being more likely to work for reputable brokers. Although we find in untabulated results that U.S. analysts are indeed significantly more likely to work for reputable (highly ranked) brokers, we do not find any evidence that this affects and explains our results.

6. Conclusions

This paper examines whether and how U.S. analysts contribute to an improvement in the home market information environment of stocks cross-listed in the United States. In doing so we investigate stock return and trading volume reactions to analyst recommendation changes issued by U.S. and local analysts for international stocks from 40 countries cross-listed in the U.S from 2003-2007. We find strong evidence of a U.S.-location premium: Our main results show that recommendation changes by analysts based in the U.S. lead to significantly higher abnormal returns in the home market of the cross-listed firm compared to recommendation changes made by local analysts. We do not find such a differential effect for other foreign analysts. We further find that the results on the U.S.-location premium to analyst recommendation changes are stronger for recommendation upgrades than downgrades consistent with market concerns of higher conflicts of interest of local analysts.

Our results are robust to various controls and to an identification strategy that uses a subsample of analysts that change status during our sample period from being U.S. analysts to becoming local analysts or vice versa. The U.S.-location premium persists within this subsample after isolating the effect of the location from unobserved differences in analyst, broker and firm characteristics.

To explore the sources of the U.S. analyst premium we first investigate three main hypotheses: whether differences in GAAP matter, whether U.S. analysts facilitate a "bonding" and certification mechanism for cross-listed firms, and whether U.S. analysts cater to U.S.

investor demand for intermediation services for cross-listed stocks. We only find empirical support for the first hypothesis. Specifically, we find that the U.S. analyst location premium stems from an advantage in understanding U.S. GAAP conform and reconciled financial statement information of firms cross-listed in the U.S. However, we also find that this advantage disappears with the adoption of IFRS. Our findings suggest that the U.S. analyst advantage does not (solely) come from the increased transparency and lower discretion to manage earnings that is associated with high-quality accounting standards such as U.S. GAAP compared to local GAAP. Rather, it seems to be related to U.S. analysts' ability and the resources afforded to them in U.S.-based brokerage houses to analyze and interpret U.S. GAAP information.

We do not find that the U.S. analyst location premium can be explained by a bonding facilitation and certification role of intermediaries in the U.S. for firms that cross-list from countries with weaker legal, governance, and reporting environments. Recommendation changes by U.S. analysts lead to a comparably higher market reaction in the home market for firms that cross-list from countries with *stronger* legal, governance, and reporting environments. The latter finding would suggest that an increase in U.S. analyst coverage that comes with a cross-listing responds to increased U.S. investors' demand for intermediation services in particular for firms from developed countries that make up a larger share of U.S. investors international portfolios. We do not find evidence that the higher home market responsiveness to U.S. analyst recommendation changes comes for higher U.S. investor demand.

We explore several alternative explanations for which we find little empirical support. For example, we examine whether the market over-reacts to U.S. analyst recommendation changes in the short-term. However, we do not find a reversal of the effect over longer-term horizons in the subsequent months of the recommendation change. We also find no evidence that U.S. analysts pre-empt local analysts' recommendation changes, that differences in analyst skill or that the geographical distance to firms' headquarters matters.

Overall, we document the existence of an economically significant U.S.-location premium to analyst recommendation changes for cross-listed stocks. Our findings suggest that U.S. analysts improve the information environment of cross-listed stocks, but that this improvement does not stem from a bonding or certification mechanism or from a U.S. investor demand effect. Rather, the source of the U.S. analyst location premium seems to come from their advantage in interpreting U.S. GAAP and GAAP reconciliations reported by cross-listed firms. Our study therefore contributes to our understanding of whether and how U.S. information intermediaries affect the home market information environment of international firms cross-listed in the U.S.

Finally, we caution the reader about the generalizability of our results post worldwide adoption of IFRS. The adoption of IFRS has affected the information environment of international firms (Daske, Hail, Leuz and Verdi, 2008 and 2012) and therefore has likely had an effect on the U.S. analyst premium we document. To the extent that IFRS adoption has levelled the playing field with respect to the predictability of earnings and value relevance of financial statement amounts, the U.S. analyst advantage will disappear. Our findings of a differential effect on local GAAP and early IFRS adopting firms takes a step in exploring this. However, evidence in a more 'mature' IFRS environment might shed further light on the effect of an interaction between international intermediaries and internationally (close to) uniform reporting. Furthermore, we largely leave the asymmetric effect of the U.S. analyst premium unexplained – that it is stronger for upgrades and weaker, if at all existent, for downgrades – other than offering conjecture on potential conflicts of interest. More direct evidence on these conflicts might further our understanding of this phenomenon. We leave these issues for future research to explore.

Appendix: Variable definitions

Broker and analyst characteristics

Analyst Firm Experience

Number of years analyst *i* has covered firm *k* minus the average number of years all other analysts have covered firm *k*. *Source*: Institutional Brokers' Estimate System (I/B/E/S)

Analyst General Experience

Number of years between recommendation *l* of analyst *i* and the analyst's first recommendation recorded in I/B/E/S. *Source*: Institutional Brokers' Estimate System (I/B/E/S)

Broker Reputation

Dummy variable equal to 1 if the analyst works for a brokerage firm that is ranked among the Top10 All-American broker in year t in the annual polls of Institutional Investor magazine.
Source: Institutional Investor Magazine

Broker Size

Natural logarithm of the total number of analysts working for the brokerage firm *j* with which the recommending analyst *i* is associated in year *t*.
Source: Institutional Brokers' Estimate System (I/B/E/S)

Country Specialist

Indicator variable equal to 1 if the analyst is a country specialist, zero if the analyst is a sector specialist. An analyst is classified as a country specialist if her or his country Herfindahl Index (HI) is larger than 0.90 and her or his sector Herfindahl Index (HI) is smaller than 0.90. An analyst is classified as a sector specialist if her or his sector Herfindahl Index (HI) is larger than 0.90 and her or his country Herfindahl Index (HI) is smaller than 0.90. Following Sonney (2009) and Salva and Sonney (2011), for each analyst, both a sector and a country HI are computed as follows:

$$HI_{a,y}^{Country} = \sum_{c=1}^{C} \alpha_c^2 \quad and \quad HI_{a,y}^{Sector} = \sum_{s=1}^{S} \alpha_s^2$$

where $\alpha_C = N_{c,a,y}/N_{a,y}$ and $\alpha_S = N_{s,a,y}/N_{a,y}$. · $N_{c,a,y}$ ($N_{s,a,y}$) is the number of firms in country *c* (sector *s*) for which analyst *a* issued forecasts over fiscal year *y*. $N_{a,y}$ is the total number of firms followed by analyst *a* over fiscal year *y*. Sectors are defined according to the Industry Classification Benchmark (ICB) Level 1 definitions which provide a hierarchy of 10 industries (Datastream item ICBIN).
Sources: Sonney (2009) and Salva and Sonney (2011); Thomson Reuters Datastream; Institutional Brokers' Estimate System (I/B/E/S).

Expatriate Local vs U.S.-Located

A dummy variable equal to 1 if the recommendation change is issued by an Expatriate local analyst and 0 if issued by an U. S. Located analyst. *Source*: Nelson's Directory of Investment Research for 2004-2008; Bae, Stulz and Tan (2008).

GeoDistance

The shortest geographical distance measured in (thousand) kilometres between the firm's headquarter city and the analyst's office city. The geographical distance is computed using the Haversine formula as :

$$R \times 2 \times \arccos\left[\sqrt{sin^2\left(\frac{Lat_f - Lat_a}{2}\right) + \cos(Lat_f) \times cos(Lat_a) \times sin^2\left(\frac{Long_f - Long_a}{2}\right)}\right]$$

where Lat_f and $Long_f$ are the geographical latitude and longitude of the firm city and Lat_a and $Long_a$ the geographical latitude and longitude of the analyst city expressed in decimal degrees, respectively. *R* is the mean radius of the earth (6371.10.km). Firms' corporate office locations are obtained using the following Worldscope items: Street Address (WC06022); City (WC06023); State, Province, County or District (WC06024); Nation (WC06026). Analysts' office locations are obtained from the Nelson's Directory of Investment Research for 2004-2008.

	Latitudes and longitudes are obtained with the *Geocoding* process in the *Google Maps API Service*. Analysts with missing data for the city location and firms headquartered in country different from the home listing country are excluded. *Sources*: Thomson Reuters Worldscope, Nelson's Directory of Investment Research for 2004-2008; Bae, Stulz and Tan (2008).
Local vs U.S- Located	A dummy variable equal to the value 1 if the recommendation change is issued by a local analyst and 0 if issued by an U.S.-located analyst. *Source*: Nelson's Directory of Investment Research for 2004-2008; Bae, Stulz and Tan (2008).
Number Firms Followed	Number of firms analyst *i* covers in year *t* in the I/B/E/S database *Source*: Institutional Brokers' Estimate System (I/B/E/S)
Pure Local vs U.S.-Located	A dummy variable equal to 1 if the recommendation change is issued by a Pure Local analyst and 0 if issued by an U. S. Located analyst. *Source*: Nelson's Directory of Investment Research for 2004-2008; Bae, Stulz and Tan (2008).

Recommendation characteristics

Abs. Recommendation Change	Absolute value of the recommendation change. For example, a recommendation change from underperform (=2) to buy (=4) has a value of 2. *Source*: Institutional Brokers' Estimate System (I/B/E/S)
Concurrent Earnings Forecast	Dummy variable equal to one if the recommending analyst issued an earnings forecast revision for the stock in the three day period surrounding the recommendation and the forecast revision was in the same direction as the recommendation change. Forecast revisions are computed as the current forecast for one-year-ahead earnings minus the prior forecast by the same analyst. *Source*: Institutional Brokers' Estimate System (I/B/E/S)
Pre-Earnings	Dummy variable equal to one if the recommendation change is issued in the two weeks prior to an earnings announcement. *Source*: Institutional Brokers' Estimate System (I/B/E/S)
Post-Earnings	Dummy variable equal to one if the recommendation change is issued in the two weeks after an earnings announcement. *Source*: Institutional Brokers' Estimate System (I/B/E/S)

Firm Characteristics

Analyst Coverage	Total number of analysts covering the firm in the year of the recommendation change. *Source*: Institutional Brokers' Estimate System (I/B/E/S)
Average Turnover	Domestic average daily trading volume obtained as the number of domestic shares traded (Datastream item VO) scaled by the domestic number of shares outstanding (Datastream item NOSH) over the 63 days prior to the recommendation change. *Source*: Thomson Reuters Datastream
Book-to-Market	Book to market ratio computed as the book value of equity (Worldscope item WC03501) for the year ended before June 30, divided by market capitalization (Worldscope item WC08001) on December 31st of the same fiscal year. Negative values are excluded. *Source*: Thomson Reuters Worldscope
GAAP Difference	GAAP difference is a measure of the difference of local GAAP of the home country of the firm to US-GAAP or IFRS following the modified scores developed in Wang and Yu (2015) based on Bae et al. (2008), who manually compare the accounting treatment of 21 accounting items under each country's local GAAP with their treatment under U.S. GAAP. Each country receives a score of one for each item that differs in its local GAAP treatment compared to the U.S. GAAP treatment with the total GAAP difference being the sum of all 21 scores (see Wang

	and Yu 2015, Table 2). The higher the score the larger the difference between the local GAAP and U.S.
Prev1M	Domestic stock return over the 21 trading days prior to the recommendation change. *Source*: Thomson Reuters Datastream
Prev1Y	Domestic stock return over the prior 252 trading days prior to the recommendation change, excluding the 21 trading days prior to the recommendation change. *Source*: Thomson Reuters Datastream
Size	Domestic market capitalization computed as the domestic share price (Datastream item P) times the domestic total number of shares outstanding (Datastream item NOSH) as of the end of June in the year prior to the recommendation change/reiteration (converted in millions of U.S. dollar). *Source*: Thomson Reuters Datastream
US ownership	*US_ownership* is the percentage ownership of the stock held by institutional investors located in the U.S. who are required to file 13f filings. *Source*: Thomson Reuters Eikon.

Socio-economic environment

Advanced Economy	Indicator variable equal to 1 if the country is an Advanced Economy and zero otherwise. *Source*: International Monetary Fund (IMF) World Economic Outlook (2004-2008 Editions)
GDP Per Capita	Indicator variable equal to 1 if GDP per capita of the country is above the sample median. Values are time-varying. *Source*: World Bank national accounts data, and OECD National Accounts data files.
Cultural Distance	A measure of cultural distance based on Hofstede's (2001) and Hofstede, Hofstede and Minkov's (2010) cultural frameworks. Specifically, the definition of cultural distance (CD_{ij}) between home market *i* and host (U.S.) market *j* is based on Dodd, Frijns and Gilbert (2015): $CD_{ij} = \sqrt{\sum_{k=1}^{K} \left\{ \left(I_{kj} - I_{ki} \right)^2 / V_k \right\}}$ where I_{kj} is country *j*'s score on the k^{th} cultural dimension and V_k is the variance of the score of the dimension *k*. The higher the score on the cultural distance measure, the greater the cultural difference between countries *i* and *j*, based on the chosen cultural framework. The 6 cultural dimensions are: *Uncertainty Avoidance, Individualism, Power Distance, Masculinity, Long-term vs Short term Orientation, Indulgence vs Restraint.* The values are time-invariant. *Source*: own calculations based on Hofstede (2001), Hofstede, Hofstede and Minkov (2010) and Dodd, Frijns and Gilbert (2015).

Legal & political environment

Legal origin	Indicator is set equal to 1 if the countries legal origin is common law, and zero otherwise. *Source:* La Porta, Lopez-de-Silanes, Shleifer and Vishny (1998) and La Porta, Lopez-de-Silanes and Shleifer (2008)
Rule of Law	Reflects perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. The variable ranges from -2.5 (weak) to 2.5 (strong). Values are time-varying. *Source*: World Bank data files and estimates.
Voice and Accountability	Reflects perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media. The variable ranges from approximately

	-2.5 (weak) to 2.5 (strong). Values are time-varying. *Source*: World Bank data files and estimates
Political Stability	Measures perceptions of the likelihood of political instability and/or politically-motivated violence, including terrorism. The variable ranges from approximately -2.5 (weak) to 2.5 (strong). Values are time-varying. *Source*: World Bank data files and estimates.
Government Effectiveness	Reflects perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. The variable ranges from approximately -2.5 (weak) to 2.5 (strong). Values are time-varying. *Source*: World Bank data files and estimates.

Regulatory & governance environment

Regulatory Quality	Reflects perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. The variable ranges from approximately -2.5 (weak) to 2.5 (strong). Values are time-varying. *Source*: World Bank data files and estimates.
Control of Corruption	Reflects perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. Ranges from approximately -2.5 (weak) to 2.5 (strong). Values are time-varying. *Source*: World Bank data files and estimates
Anti-director rights index	Indicator variable equal to 1 if the anti-director rights index of the country is above the sample median. The anti-director rights index is formed by adding 1 when: (1) the country allows shareholders to mail their proxy vote; (2) shareholders are not required to deposit their shares prior to the general shareholders' meeting; (3) cumulative voting or proportional representation of minorities on the board of directors is allowed; (4) an oppressed minorities mechanism is in place; (5) shareholders have pre-emptive rights that can only be waived by a shareholders meeting; and (6) the minimum percentage of share capital that entitles a shareholder to call for an extraordinary shareholders' meeting is less than or equal to 10%. The index ranges from 0 to 6. A higher score indicates a higher level of investor protection. The index is time-invariant and based on data available in May 2003. *Source*: Djankov, La Porta, Lopez-de-Silanes and Shleifer (2008)
Anti-self-dealing index	Indicator variable equal to 1 if the anti-self-dealing rights index of the country is above the sample median. The anti-self-dealing index is formed by taking the average of ex ante and ex post private control of self-dealing indices. The index of ex ante control of self-dealing transactions is an average of approval by disinterested shareholders and ex ante disclosure. The index of ex post control of self-dealing transactions is an average of disclosures in periodic filings and ease of proving wrongdoing. A higher score indicates a higher level of strength of minority shareholder protection against self-dealing by the controlling shareholder. The index is time-invariant and based on data in May 2003. *Source*: Djankov, La Porta, Lopez-de-Silanes and Shleifer (2008)

Reporting & disclosure environment

CIFAR Transparency Index	Indicator variable equal to 1 if the index of the country is above the sample median. The index is created by the Center for Financial Analysis and Research based on firms' 1995 annual reports. It counts the inclusion or omission of 90 items in the annual report in each country. The index covers a minimum of three companies and is time-invariant. *Sources*: CIFAR and Bushman, Piotroski and Smith (2004)

Disclosure Requirements Index	Indicator variable equal to 1 if the index of the country is above the sample median. The index captures disclosure requirements for domestic corporations that raise capital through an initial public offering on the country's largest stock exchange. The index captures prospectus, compensation, shareholders; inside ownership; contracts; and transactions disclosures. A higher score indicates a higher level of disclosure. The index is time-invariant and based on data in May 2003. *Source*: Djankov, La Porta, Lopez-de-Silanes and Shleifer (2008)
Reporting Frequency	The within country average frequency of financial reports issued each year by all domestic public companies in each country using the *Earnings Report Frequency* Worldscope item (WC05200) . For each firm, its reporting frequency is coded as 1 for quarterly reporting, 2 for semi-annual, 3 for three fixed interims, 4 for annual and 0 for missing quarter/quarters. Only domestic firms indicated as major stock and primary issue in a domestic stock exchange are considered. Data are from Thomson Reuters Worldscope countries' constituent lists (*WSCOPE*[country_code]) for the 40 countries in the sample and are time-varying for 2003-2007. *Source*: own calculations
BIG 4 Auditor	Indicator variable equal to 1 if the fraction of public firms in the country that use a Big Four auditor is above the sample median (as reported in Hope, Kang, Thomas, and Yoo, 2008). The primary source for identifying the firm's auditor is Compustat Global (CG#Auop1). The values are time-invariant and based on values computed between 1992 and 2004. *Source*: Hope, Kang, Thomas and Yoo (2008).
Earnings quality	
Earnings Management	Indicator variable equal to 1 if earnings management and opacity scores of the country are above the sample median. Earnings management and opacity scores are based on Leuz, Nanda and Wysocki (2003) and tabulated and updated in Leuz (2010). These aggregate scores consist of 4 metrics measuring the extent to which firms' reported earnings obfuscate or potentially misrepresent economic performance as a result of earnings smoothing and the use of reporting discretion. A higher score indicates a higher level of earnings management. The index is time-invariant and based on values computed between 1996 and 2005. *Source*: Leuz, Nanda and Wysocki (2003) and Leuz (2010)
Timely Bad News Recognition	This variable captures the average country-level association between reported firm-level earnings and bad news in stock returns as defined in Bushman and Piotroski (2006). The values of the variable are obtained by the country estimates of the coefficients β_3 obtained from within country pooled regressions: $NI = \beta_0 + \beta_1 NEG + \beta_2 RET + \beta_3 RET*NEG$, where NI is a firm's reported net income (Worldscope item WC01706), RET is the annual stock return and NEG is a dummy variable which equals one if RET<0. A higher score means more timely recognition of bad news, i.e., higher quality financial reporting. Only domestic non-financial firms indicated as major stock and primary issue in a domestic stock exchange are considered. Data are from Thomson Reuters Worldscope countries' constituent lists (*WSCOPE*[country_code]) for the 40 countries in the sample and are for the period 1996-2005. The variable is time-invariant. *Source*: own calculations based on Bushman and Piotroski (2006)

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Table 1. Analyst and Recommendation Summary Statistics

Panel A: Analysts and Recommendation Statistics by Country

Country	# of firms	(%)	Number of Recommendations Changes/Reiterations issued by							Number of Analysts					
			Local Analysts		Foreign Analysts			Total No. of Rec. Changes/Reit.	(%)	Local Analyst		Foreign Analysts			Total No. of Analysts by countries obs.
			Pure Local	Expatriate Local	Foreign SR	Foreign DR	U.S.-Located			Pure Local	Expatriate Local	Foreign SR	Foreign DR	U.S.-Located	
Argentina	11	2.00%	23	2	4	24	18	53	0.19%	2	1	1	14	11	18
Australia	11	2.00%	170	332	24	37	28	563	1.98%	32	61	2	10	6	105
Austria	1	0.18%	1	0	55	0	0	56	0.20%	1	0	20	0	0	21
Belgium	1	0.18%	26	2	72	2	2	102	0.36%	7	2	26	1	1	36
Brazil	36	6.55%	590	363	1	643	463	1,597	5.61%	53	28	1	75	59	157
Canada	196	35.64%	5,192	781	1,777	318	1,777	8,068	28.36%	396	68	384	63	384	911
Chile	11	2.00%	72	43	33	100	82	248	0.87%	5	9	8	27	21	49
China	14	2.55%	46	59	346	329	194	780	2.74%	12	15	87	78	47	192
Colombia	1	0.18%	0	0	0	6	5	6	0.02%	0	0	0	2	2	2
Denmark	3	0.55%	26	47	150	5	5	228	0.80%	5	15	55	1	1	76
Finland	2	0.36%	48	11	307	84	79	450	1.58%	9	5	68	28	27	110
France	21	3.82%	317	144	956	61	47	1,478	5.19%	98	38	282	30	26	448
Germany	13	2.36%	764	76	597	73	66	1,510	5.31%	109	28	187	31	29	355
Greece	2	0.36%	52	8	117	2	2	179	0.63%	13	2	34	1	1	50
Hong Kong	10	1.82%	342	127	294	496	289	1,259	4.42%	59	35	67	107	56	268
Hungary	1	0.18%	5	0	28	1	1	34	0.12%	2	0	11	1	1	14
India	11	2.00%	169	326	46	90	60	631	2.22%	42	55	9	19	14	125
Indonesia	2	0.36%	17	27	100	34	15	178	0.63%	7	8	13	5	2	33
Ireland	5	0.91%	43	0	225	21	21	289	1.02%	14	0	61	8	8	83
Israel	10	1.82%	6	12	0	19	12	37	0.13%	2	3	0	9	4	14
Italy	7	1.27%	106	88	242	11	11	447	1.57%	30	21	86	5	5	142
Japan	26	4.73%	369	684	8	54	35	1,115	3.92%	76	109	2	18	11	205
Luxembourg	2	0.36%	0	0	65	25	21	90	0.32%	0	0	22	8	6	30
Mexico	21	3.82%	89	0	31	309	241	429	1.51%	14	0	4	58	45	76
Netherlands	16	2.91%	311	198	912	89	84	1,510	5.31%	62	38	237	29	27	366
New Zealand	2	0.36%	0	15	8	0	0	23	0.08%	0	6	2	0	0	8
Norway	6	1.09%	196	145	188	4	4	533	1.87%	34	29	61	1	1	125
Peru	1	0.18%	1	0	6	32	30	39	0.14%	1	0	2	9	8	12
Philippines	1	0.18%	1	10	17	21	5	49	0.17%	1	5	4	6	3	16
Portugal	3	0.55%	20	5	159	0	0	184	0.65%	7	2	43	0	0	52
Russia	5	0.91%	43	12	75	19	16	149	0.52%	10	2	20	6	5	38
South Africa	8	1.45%	188	227	0	175	76	590	2.07%	16	19	0	40	15	75
South Korea	8	1.45%	298	164	18	86	67	566	1.99%	61	37	7	19	11	124
Spain	5	0.91%	23	87	346	15	15	471	1.66%	10	20	85	4	4	119
Sweden	1	0.18%	13	3	17	0	0	33	0.12%	4	1	7	0	0	12
Switzerland	10	1.82%	103	35	618	38	34	794	2.79%	33	14	156	10	9	213
Taiwan	7	1.27%	44	231	68	101	71	444	1.56%	12	41	20	34	26	107
Turkey	1	0.18%	18	0	46	8	8	72	0.25%	6	0	10	2	2	18
United Kingdom	57	10.36%	1,163	1,320	327	334	262	3,144	11.05%	270	248	120	96	81	734
Venezuela	1	0.18%	0	1	3	21	11	25	0.09%	0	1	1	8	5	10
Total	550	100.00%	10,895	5,585	8,286	3,687	4,157	28,453	100.00%					All Analysts	3,876

Panel B: Analyst and Recommendation Statistics by Year

Year	# of firms	(%)	Number of Recommendations Changes/Reiterations issued by							Number of Analysts							
			Local Analysts		Foreign Analysts			# of Rec. Changes/Reit.	(%)	Local Analysts		Foreign Analysts			# of Analysts by year obs.	Year(s) with Rec. Changes/Reit.	# of firms
			Pure Local	Expatriate Local	Foreign SR	Foreign DR	U.S.-Located			Pure Local	Expatriate Local	Foreign SR	Foreign DR	U.S.-Located	.		
2003	432	56.73%	2,256	1,613	2,060	902	990	6,831	24.01%	655	512	755	274	313	2,196	5 Years	312
2004	442	12.00%	2,115	1,411	1,612	624	642	5,762	20.25%	710	459	686	212	233	2,067	4 Years	66
2005	436	10.91%	2,251	917	1,746	623	727	5,537	19.46%	681	361	606	236	274	1,884	3 Years	60
2005	448	11.64%	2,223	854	1,446	783	881	5,306	18.65%	676	315	589	250	291	1,830	2 Years	64
2007	422	8.73%	2,050	790	1,422	755	917	5,017	17.63%	620	288	533	220	267	1,661	1 Year	48
		100.00%	10,895	5,585	8,286	3,687	4,157	28,453	100.00%				All Analysts		3,869	All Firms	550

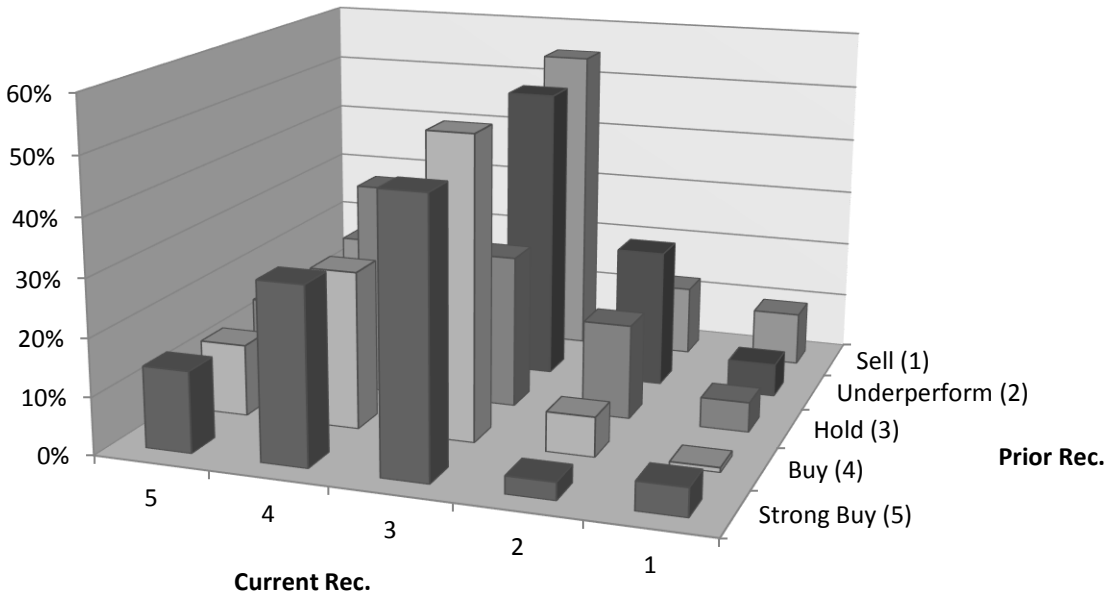
This table reports analyst and recommendation summary statistics for firms cross-listed on NYSE, NASDAQ and AMEX as ADR Level II, ADR Type III and Ordinary Shares between 2003 and 2007 by country (Panel A) and year (Panel B). Recommendations and analysts are grouped into seven analyst-location categories: *Local* refers to a recommendation change or reiteration issued by an analyst whose location is the same as the covered firm. *Foreign* refers to a recommendation change or reiteration issued by analysts who are located in a different country from the firm they cover. *Pure Local* and *Expatriate Local* are the subsets of the *Local* category. *Pure local* analysts work for local research firms, while *Expatriate Local* analysts work for research firms from foreign countries. *Foreign_SR* and *Foreign_DR* and subsets of the *Foreign* category. *Foreign_SR* are analysts located in a different country from the firm they cover but in the same geographical region. *Foreign_DR* are analysts located in a different country from the firm they cover and in a different geographical region. *US-located* is a subset of the *Foreign* category that refers to analyst who are located in the United States. *US-located* analyst can belong to the *Foreign_SD* or to the *Foreign_DR* category. The sum of analysts following firms as *Pure Local, Expatriate Local, Foreign_SR, Foreign_DR* does not equal the total actual number of analysts since a given analyst can follow more than one firm in more than one sector and can change location in a given year.

Table 2. Descriptive Statistics of Recommendation Changes

	Current Recommendation					
	(5)	(4)	(3)	(2)	(1)	**Total**
Prior Recommendation	Strong Buy	Buy	Hold	Underperform	Sell	
(5) Strong Buy	509 14.21%	1,100 30.72%	1,686 47.08%	110 3.07%	176 4.91%	3,581 100%
(4) Buy	1,093 12.58%	2,382 27.41%	4,539 52.23%	603 6.94%	73 0.84%	8,690 100%
(3) Hold	1,659 14.47%	4,252 37.09%	3,051 26.61%	1,901 16.58%	601 5.24%	11,464 100%
(2) Underperfom	94 2.62%	578 16.09%	1,844 51.32%	869 24.19%	208 5.79%	3,593 100%
(1) Sell	182 16.18%	83 7.38%	617 54.84%	138 12.27%	105 9.33%	1,125 100%
Total	3,537	8,395	1,1737	3,621	1,163	28,453

The sample of recommendation changes/reiterations are from I/B/E/S Detail U.S. and International Files 2003 to 2007. Each recommendation change (reiteration) is an analyst's current rating minus his prior rating. Ratings are coded as 1 (sell) to strong buy (5), and rating changes lie between -4 and 4. Anonymous analysts are excluded. The table reports the transition probabilities of recommendation changes/reiterations. For example in column 4, when the prior recommendation is a hold, it has a 37.09% of transiting to a buy rating.

Fig. 1. Transition Probabilities of Recommendation Changes



The sample of recommendation changes/reiterations are from I/B/E/S Detail U.S. and International Files 2003 to 2007. Each recommendation change (reiteration) is an analyst's current rating minus his prior rating. Ratings are coded as 1 (sell) to strong buy (5), and rating changes lie between -4 and 4. Anonymous analysts are excluded. The chart plots the probability that a prior recommendation transits to any of the five rating categories.

Table 3. Differences in Home-Market CARs and CAVs by Analysts Locations

		Upgrades		Downgrades	
Analyst Location	**Obs.**	**CAR**	**CAV**	**CAR**	**CAV**
U.S.	1,417	1.89***	7.26***	-2.51***	10.26***
		(10.49)	(11.4)	(-12.49)	(16.46)
Local	6,388	1.06***	8.62***	-1.65***	9.99***
		(16.14)	(33.64)	(-19.90)	(37.09)
Pure Local	4,415	1.04***	9.05***	-1.78***	10.62***
		(12.44)	(29.75)	(-16.43)	(32.80)
Expatriate Local	1,973	1.09***	7.68***	-1.35***	8.52***
		(13.28)	(16.16)	(-12.07)	(17.62)
U.S.– Local		0.83***	-1.34**	-0.86***	0.28
		(4.36)	(-1.96)	(-3.95)	(0.42)
U.S.– Pure Local		0.85***	-1.78**	-0.79***	-0.34
		(4.31)	(-2.53)	(-3.21)	(-0.49)
U.S.– Expatriate Local		0.79***	-0.36	-1.16***	1.74**
		(3.85)	(-0.46)	(-5.03)	(2.21)

This table reports percent home-market cumulative abnormal returns (CARs) and cumulative abnormal volumes (CAVs) following recommendation changes for firms cross-listed on NYSE, Nasdaq and AMEX as ADR Level II, ADR Level III or Ordinary Shares between 2003 and 2007 over a three-day [-1, +1] event window. Left-hand side columns show the results for upgrades, right-hand side columns for downgrades. Recommendations are grouped into four analyst-location categories: *U.S.-located* refers to analysts who are located in the United States. *Local* refers to a recommendation changes issued by analysts whose location is the same as the covered firm. *Pure Local* and *Expatriate Local* are subsets of the *Local* category. *Pure Local* analysts work for local research firms, while *Expatriate Local* analysts work for research firms from foreign countries. Mean home-market abnormal returns are measured as the home-market raw return less the return on their national stock market index. Similarly, mean home-market abnormal volumes are computed as the home-market raw volume less the average home-market volume. The bottom three rows report differences in means for CARs and CAVs by analyst location. *t*-statistics for the two-sided test are in parentheses below the mean estimates. Differences in means are computed assuming unequal variances. *, **, and *** denote significance at the 10%, 5%, and 1% level.

Table 4. Cross-Sectional Regressions on Home Market CARs

	Upgrades						Downgrades					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
U.S. vs Local	**0.822**			**0.500**	**2.066**	**2.712**	**-1.102**			**-0.401**	**0.789**	**0.125**
	(3.39)***			**(2.00)****	**(2.11)****	**(2.27)****	**(-4.06)*****			**(-1.67)***	**(0.89)**	**(0.14)**
U.S. vs Pure Local		**0.943**						**-1.075**				
		(3.12)***						**(-3.15)*****				
U.S. vs Expatriate Local			**0.898**						**-1.368**			
			(3.17)***						**(-4.44)*****			
Broker Size	0.148	0.104	0.123	0.186	-0.008	0.037	-0.100	-0.191	-0.090	-0.277	0.127	0.266
	(2.07)**	(0.94)	(0.99)	(2.33)**	(-0.03)	(0.09)	(-1.43)	(-1.87)*	(-0.76)	(-4.07)***	(0.37)	(0.45)
Broker Reputation	-0.104	-0.325	-0.023	0.214	1.005	1.137	0.376	0.761	0.073	-0.367	0.001	1.149
	(-0.43)	(-0.76)	(-0.08)	(0.96)	(1.93)*	(1.79)*	(1.38)	(1.69)*	(0.25)	(-1.63)	(0.00)	(0.78)
Analyst General Experience	0.051	0.047	0.033	0.018	-0.098	0.257	-0.056	-0.046	-0.071	0.008	-0.466	-0.162
	(1.77)*	(1.34)	(0.70)	(0.57)	(-0.17)	(0.39)	(-1.57)	(-1.08)	(-1.31)	(0.26)	(-0.75)	(-0.19)
Analyst Firm Experience	-0.035	-0.030	0.013	-0.017	-0.036	-0.037	-0.003	-0.007	0.001	-0.070	-0.064	-0.129
	(-0.98)	(-0.68)	(0.26)	(-0.49)	(-0.61)	(-0.41)	(-0.07)	(-0.13)	(0.02)	(-1.80)*	(-1.02)	(-1.28)
Number Firms Followed	-0.029	-0.038	-0.024	-0.022	-0.020	-0.049	0.025	0.026	0.018	0.003	0.017	0.011
	(-3.33)***	(-3.72)***	(-1.58)	(-2.13)**	(-0.90)	(-1.66)*	(2.44)**	(2.28)**	(1.06)	(0.28)	(0.75)	(0.38)
Concurrent Earnings Forecast	0.397	0.450	0.532	0.336	0.556	0.734	-1.160	-1.298	-0.873	-1.140	-1.160	-1.523
	(1.99)**	(1.79)*	(1.71)*	(1.73)*	(2.31)**	(2.55)**	(-5.21)***	(-4.62)***	(-2.98)***	(-5.84)***	(-5.38)***	(-5.95)***
Pre-Earnings	0.324	0.497	0.034	0.083	-0.063	-0.280	0.846	0.786	0.698	0.457	-0.051	-0.638
	(1.00)	(1.26)	(0.08)	(0.26)	(-0.16)	(-0.61)	(3.31)***	(2.51)**	(1.67)*	(1.58)	(-0.14)	(-1.52)
Post-Earnings	0.301	0.226	0.631	0.180	0.276	0.288	-0.797	-0.700	-0.977	-0.766	-0.732	-0.692
	(1.24)	(0.76)	(1.79)*	(0.81)	(1.02)	(0.94)	(-2.52)**	(-1.84)*	(-2.08)**	(-2.53)**	(-1.97)**	(-1.53)
Abs. Recommendation Change	-0.031	-0.172	0.286	0.031	0.327	0.388	-0.463	-0.532	-0.484	-0.430	-0.792	-0.770
	(-0.25)	(-1.13)	(1.47)	(0.25)	(1.59)	(1.68)*	(-2.72)***	(-2.55)**	(-2.11)**	(-2.89)***	(-2.76)***	(-2.19)**
Prev1M	-2.220	-2.487	-0.333	-2.345	-1.863	-0.817	-1.011	-1.212	0.711	-2.023	-1.426	0.638
	(-2.48)**	(-2.25)**	(-0.29)	(-2.29)**	(-1.49)	(-0.52)	(-0.90)	(-0.89)	(0.56)	(-1.70)*	(-1.12)	(0.44)
Prev1Y	-0.533	-0.398	-0.527	-1.018	-1.191	-1.441	1.353	1.878	1.005	0.504	0.883	0.527
	(-1.91)*	(-1.22)	(-1.14)	(-2.38)**	(-2.10)**	(-2.17)**	(4.29)***	(4.81)***	(2.22)**	(1.44)	(1.95)*	(0.98)
Avgerage Turnover	-0.000	-0.001	-0.000	-0.001	-0.001	-0.026	0.001	0.001	0.001	0.004	0.003	0.003
	(-0.32)	(-0.53)	(-0.37)	(-0.56)	(-0.68)	(-1.66)*	(2.04)**	(1.97)**	(1.97)**	(5.86)***	(4.05)***	(8.39)***
Size	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	0.000	0.000	0.000	-0.000	-0.000	-0.000
	(-6.29)***	(-6.60)***	(-4.46)***	(-3.05)***	(-2.11)**	(-2.41)**	(8.52)***	(8.44)***	(5.27)***	(-1.63)	(-0.86)	(-1.47)
Book-to-Market	-0.026	-0.059	-0.053	-0.494	-0.453	-0.622	0.031	0.129	0.085	-1.339	-1.709	-1.880
	(-0.50)	(-0.96)	(-0.80)	(-1.40)	(-1.48)	(-1.50)	(0.49)	(1.60)	(0.96)	(-3.91)***	(-3.50)***	(-2.78)***

Analyst Coverage	-0.013	-0.001	-0.009	-0.048	-0.067	-0.054	-0.010	-0.012	-0.009	-0.155	-0.229	-0.248
	(-1.31)	(-0.12)	(-0.76)	(-2.43)**	(-2.40)**	(-1.67)*	(-0.77)	(-0.80)	(-0.69)	(-6.00)***	(-5.86)***	(-5.14)***
Year Fixed Effects	N	N	N	Y	Y	Y	N	N	N	Y	Y	Y
Firm Fixed Effects	N	N	N	Y	Y	N	N	N	N	Y	Y	N
Analyst Fixed Effects	N	N	N	N	Y	N	N	N	N	N	Y	N
Firm-analyst Fixed Effects	N	N	N	N	N	Y	N	N	N	N	N	Y
Observations	7,554	5,619	3,304	7,510	6,637	5,446	7,835	5,901	3,446	7,782	6,836	5,585
Adj. R^2	0.01	0.01	0.01	0.08	0.08	0.06	0.02	0.03	0.02	0.20	0.22	0.15

This table reports results of pooled cross-sectional OLS estimations for home-market cumulative abnormal returns (CARs) following recommendation changes for firms cross-listed on NYSE, NASDAQ and AMEX as ADR Level II, ADR Level III or Ordinary Shares between 2003 and 2007. *US* refers to analysts who are located in the United States. *Local* refers to a recommendation change issued by an analyst whose location is the same as the covered firm. *Pure Local* and *Expatriate Local* are the subsets of the *Local* category. *Pure Local* analysts work for local research firms, while *Expatriate Local* analysts work for research firms from foreign countries. *US vs Local* is a dummy variable that takes 1 if the recommendation change is issued by an *U.S.-located* analyst and 0 if issued by a local analyst. *US vs Pure Local* is a dummy variable that takes 1 if the recommendations change is issued by a *U.S.-located* analyst and 0 if issued by an *Pure Local* analyst. *US vs Expatriate Local* is a dummy variable that takes 1 if the recommendation change is issued by an *U.S.-located* analyst and 0 if issued by an *Expatriate Local* analyst. Variable descriptions of the control variables are provided in the appendix. Home-market abnormal returns are measured as the home-market return less the return on the national stock market index portfolio. Columns (1)-(6) show estimation results for recommendation upgrades and columns (7)-(12) show estimation results for recommendation downgrades. *t*-statistics are in parentheses below the coefficient estimates. Standard errors are clustered by analyst. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively

Table 5. Analyst Movers

Panel A: All analysts that move locations to/from the U.S.

	Upgrades				Downgrades			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
U.S. vs Local	1.075	1.089	2.190	2.465	-0.342	0.524	0.596	-0.176
	(2.90)***	(1.67)*	(2.08)**	(2.24)**	(-0.75)	(0.49)	(0.61)	(-0.16)
Controls	Y	Y	Y	Y	Y	Y	Y	Y
Fixed Effects								
Year	N	Y	Y	Y	N	Y	Y	Y
Firm	N	N	Y	N	N	N	Y	N
Analyst	N	Y	Y	N	N	Y	Y	N
Firm-Analyst	N	N	N	Y	N	N	N	Y
Observations	1,643	1,471	1,421	1,223	1,692	1,524	1,454	1,251
Adj. R^2	0.04	0.03	0.04	0.07	0.01	0.16	0.17	0.19

Panel B: Analysts that move locations to/from the U.S. and move…

	…within the same broker							
	Upgrades				**Downgrades**			
	Coeff.	*t-stat*	*N*	*Adj. R^2*	*Coeff.*	*t-stat*	*N*	*Adj. R^2*
U.S. vs Local	2.207	(3.00)***	912	0.06	0.783	(0.74)	918	0.16
Firm-analyst fixed effects	Y				Y			
Broker fixed effects	Y				Y			
	…to a different broker							
	Upgrades				**Downgrades**			
	Coeff.	*t-stat*	*N*	*Adj. R^2*	*Coeff.*	*t-stat*	*N*	*Adj. R^2*
U.S. vs Local	4.350	(2.52)**	324	0.08	-2.222	(-1.69)*	354	0.13
Firm-analyst fixed effects	Y				Y			
Broker fixed effects	Y				Y			

This table reports results of pooled cross-sectional OLS estimations for home-market cumulative abnormal returns (CARs) following recommendation changes for firms cross-listed on NYSE, NASDAQ and AMEX as ADR Level II, ADR Level III or Ordinary Shares between 2003 and 2007. *US vs Local* is a dummy variable that takes 1 if the recommendation change is issued by an U.S.-located analyst and 0 if issued by a local analyst. Home-market abnormal returns are measured as the home-market return less the return on the national stock market index. Panel A shows results of regressions within the subset of analysts that move locations from local to U.S.-located or from U.S.-located to local. Control variables are the same as in Table 4. Variable descriptions are provided in the appendix. Columns (1)-(4) show estimation results for recommendation upgrades and columns (5)-(8) show estimation results for recommendation downgrades. Standard errors are clustered by analyst. Panel B shows results of regressions within the subset of analysts that move locations from local to U.S.-located or from U.S.-located to local, and stay with the same brokerage firm (upper panel) or move to a different broker (lower panel). The regressions control for firm-analyst and broker fixed effects. *t*-statistics are provided in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively

Table 6. GAAP Differences

	(1) GAAP DIFFERENCE		(2) US-GAAP		(3) IFRS ADOPTION	
	LOW	HIGH	YES	NO	BEFORE	AFTER
U.S. vs Local	3.090	-1.861	11.408	2.530	1.88	-2.090
	(2.57)**	(-2.23)**	(5.64)***	(2.21)**	(2.11)**	(-1.85)*
Controls	Y	Y	Y	Y	Y	Y
Fixed Effects						
Year	Y	Y	Y	Y	Y	Y
Analyst	N	N	N	N	Y	Y
Firm-analyst	Y	Y	Y	Y	N	N
Observations	3,337	2,108	592	4,655	4,937	1,426
Adj. R-sq	0.06	0.12	0.02	0.08	0.05	0.07

This table reports results of pooled cross-sectional OLS estimations for home-market cumulative abnormal returns (CARs) following recommendation upgrades for firms cross-listed on NYSE, NASDAQ and AMEX as ADR Level II, ADR Level III and Ordinary Shares between 2003 and 2007. *US vs Local* is a dummy variable equal to 1 if the recommendation change is issued by a U.S.-located analyst and 0 if issued by a local analyst. Home-market abnormal returns are measured as the home-market return less the return on the national stock market index. Control variables are the same as in Table 4. Columns (1) show estimation results for the sample partitioned into high and low GAAP Difference. GAAP difference is a measure of the difference of local GAAP of the home country of the firm to US-GAAP or IFRS following Wang and Yu (2015). Columns (2) show estimation results for the sample partitioned into whether the cross-listed firm adopted US-GAAP for reporting purposes. Columns (3) show estimation results for the sample partitioned into before and after the firm adopted IFRS (either voluntarily or with mandatory adoption in the respective home country). Variable descriptions are provided in the appendix. Standard errors are clustered by analyst in columns (1) and (2) and by firm in columns (3). The regressions control for fixed effects denoted in the table. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. *t*-statistics are provided in parentheses.

Table 7. Cross-Sectional Regressions by Country Characteristics

	Upgrade				Downgrade			
	U.S. vs Local indicator	Country characteristic	Interaction effect (U.S. vs Local x country characteristic)	*Adj. R^2*	U.S. vs Local indicator	Country characteristic	Interaction effect (U.S. vs Local x country characteristic)	*Adj. R^2*
Socio-economic environment								
Advanced economy	0.218	1.327	0.897	0.02	-0.392	-2.128	-1.114	0.03
	(0.73)	(3.64)***	(2.31)**		(-1.26)	(-5.43)***	(-2.51)**	
GDP per capita	0.735	0.236	0.191	0.01	-0.447	-2.062	-1.430	0.03
	(2.67)***	(0.56)	(0.44)		(-1.69)*	(-4.36)***	(-2.85)***	
Cultural distance	1.266	-0.261	-0.207	0.01	-2.243	0.804	0.510	0.03
	(2.82)***	(-2.16)**	(-1.61)		(-4.32)***	(6.08)***	(3.46)***	
Legal & political environment								
Legal origin	1.173	-1.182	-0.911	0.01	-1.551	2.025	1.135	0.03
	(3.43)***	(-3.34)***	(-2.41)**		(-3.93)***	(5.08)***	(2.57)**	
Rule of law	0.379	0.653	0.427	0.02	-0.674	-1.034	-0.458	0.03
	(1.50)	(3.78)***	(2.25)**		(-2.36)**	(-5.13)***	(-1.98)**	
Voice & Accountability	0.615	0.526	0.257	0.01	-0.790	-1.418	-0.491	0.03
	(2.22)**	(2.36)**	(1.03)		(-2.60)***	(-6.07)***	(-1.74)*	
Political Stability	0.596	0.830	0.463	0.02	-0.629	-1.575	-0.849	0.03
	(2.79)***	(2.94)***	(1.57)		(-2.66)***	(-4.94)***	(-2.41)**	
Government Effectiveness	0.164	0.768	0.510	0.02	-0.445	-1.131	-0.533	0.03
	(0.56)	(3.76)***	(2.31)**		(-1.30)	(-4.98)***	(-2.06)**	
Regulatory & governance environment								
Regulatory quality	0.034	0.817	0.666	0.01	-0.345	-1.038	-0.647	0.02
	(0.11)	(3.59)***	(2.75)***		(-0.96)	(-3.90)***	(-2.20)**	
Corruption Control	0.173	0.652	0.501	0.02	-0.515	-0.922	-0.481	0.02
	(0.62)	(3.88)***	(2.77)***		(-1.70)*	(-4.93)***	(-2.27)**	
Anti-director rights	0.612	0.301	0.244	0.01	-0.265	-1.721	-1.049	0.02
	(1.22)	(0.65)	(0.44)		(-0.35)	(-3.73)***	(-1.30)	
Anti-self-dealing	0.794	0.102	0.634	0.01	-0.872	0.547	-0.706	0.02
	(3.19)***	(0.20)	(-1.25)		(-3.14)***	(0.84)	(-1.13)	
Reporting & disclosure environment								
CIFAR	0.912	-0.918	-0.552	0.01	-0.878	0.577	-0.556	0.02
	(3.62)***	(-1.90)*	(-1.09)		(-3.13)***	(0.99)	(-0.89)	
Disclosure Requirements	0.276	1.057	0.799	0.01	-1.248	-0.490	0.258	0.02
	(0.82)	(2.90)***	(2.03)**		(-2.99)***	(-1.13)	(0.55)	
Reporting frequency	1.073	-0.606	-0.200	0.01	-0.054	0.319	-0.511	0.02

	(1.60)	(-1.77)*	(-0.54)		(-0.06)	(0.75)	(-1.08)	
Big4 Auditors	0.649	0.405	0.170	0.01	-0.550	-1.515	-0.442	0.03
	(2.00)**	(0.99)	(0.41)		(-1.76)*	(-3.68)***	(-1.00)	
Earnings quality								
Earnings management	1.015	-0.732	-0.506	0.01	-1.614	2.044	1.302	0.03
	(2.98)***	(-1.96)*	(-1.26)		(-4.12)***	(5.07)***	(2.88)***	
Timely bad news recognition	0.939	-0.300	-0.169	0.01	-1.156	0.200	0.082	0.02
	(-3.19)***	(-1.86)*	(-0.93)		(-3.43)***	(1.01)	(0.36)	

This table reports results of pooled cross-sectional OLS estimations for domestic cumulative abnormal returns (CARs) following recommendation changes for firms cross-listed on NYSE, NASDAQ and AMEX as ADR Level II, ADR Level III or Ordinary Shares between 2003 and 2007. *US vs Local* is a dummy variable equal to 1 if the recommendation change is issued by an U.S.-located analyst and 0 if issued by a local analyst. The specific country characteristic is reported in the row headings. Domestic abnormal returns are measured as the domestic return less the return on the national stock market index. The table shows in each row the coefficient and t-statistic of each regression for our main indicator *US vs Local*, the particular country characteristic and their interaction effect. Control variables are the same as in Table 4. Variables descriptions are provided in the appendix. The regressions control for year fixed effects and standard errors are clustered by analyst. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. *t*-statistics are provided in parentheses.

Table 8. US Institutional Investor Ownership

	(1)	(2)	(3)	(4)
U.S. vs Local	1.881	2.363	4.635	5.210
	(3.58)***	(2.77)***	(3.09)***	(3.54)***
US_ownership	0.019	0.005	-0.016	-0.038
	(2.48)**	(0.45)	(-0.40)	(-0.72)
U.S. vs Local × US_ownership	-0.047	-0.049	-0.085	-0.093
	(-3.56)***	(-2.79)***	(-2.65)***	(-2.95)***
Controls	Y	Y	Y	Y
Fixed Effects				
Year	N	Y	Y	Y
Firm	N	Y	Y	N
Analyst	N	N	Y	N
Firm-analyst	N	N	N	Y
Observations	1,642	1,471	1,421	1,223
Adj. R2	0.05	0.03	0.06	0.10

This table reports results of pooled cross-sectional fixed-effects estimations for home-market cumulative abnormal returns (CARs) following recommendation upgrades for firms cross-listed on NYSE, NASDAQ and AMEX as ADR Level II, ADR Level III and Ordinary Shares between 2003 and 2007. *US vs Local* is a dummy variable equal to 1 if the recommendation change is issued by a U.S.-located analyst and 0 if issued by a local analyst. *US_ownership* is the percentage ownership of the stock held by institutional investors located in the U.S. who are required to file 13f filings. Home-market abnormal returns are measured as the home-market return less the return on the national stock market index. Control variables are the same as in Table 4. Variable descriptions are provided in the appendix. Standard errors are clustered by analyst. The regressions control for fixed effects denoted in the table. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. *t*-statistics are provided in parentheses.

Table 9. Relative Timing & Analyst Specialization

Panel A: Contingency tables

		Follower		
		0	1	Total
US vs Local	0	**13,653** *66.18%*	**2,820** *13.67%*	**16,473** *79.85%*
	1	**3,419** *16.57%*	**738** *3.58%*	**4,157** *20.15%*
	Total	**17,072** *82.75%*	**3,558** *17.25%*	**20,630** *100%*

Pearson χ^2 *= 0.9356, Pr = 0.333*

		Country vs Sector Specialist		
		0	1	Total
US vs Local	0	**3,038** *30.95%*	**4,967** *50.60%*	**8,005** *81.55%*
	1	**1,519** *15.47%*	**292** *2.97%*	**1,811** *18.45%*
	Total	**4,557** *46.42%*	**5,259** *53.58%*	**9,816** *100%*

Pearson χ^2 *= 1300.0, Pr < 0.001*

Panel B: Cross-sectional and interaction effects

	Follower		**Country Specialist**	
	(1)	(2)	(3)	(4)
U.S. vs Local	2.692	2.529	3.541	4.227
	(2.26)**	(2.05)**	(2.66)***	(3.43)***
Follower/Country Specialist	0.230	0.831	-1.917	-3.765
	(0.87)	(1.61)	(-1.32)	(-1.99)**
U.S. vs Local × *Follower/Country Specialist*		0.731		-2.077
		(1.23)		(-1.11)
Controls	Y	Y	Y	Y
Fixed Effects				
Year	Y	Y	Y	Y
Firm-analyst	Y	Y	Y	Y
Observations	5,445	5,445	2,460	2,460
Adj. R2	0.06	0.06	0.147	0.147

Panel A summarizes the contingency table between the indicator variables *US vs Local* and *Follower* (left) and *US vs Local* and *Country Specialist* (right) for the analysts in our sample that issued recommendation changes for firms cross-listed on NYSE, NASDAQ and AMEX as ADR Level II, ADR Level III and Ordinary Shares between 2003 and 2007. *US vs Local* is a dummy variable equal to 1 if the recommendation change is issued by an U.S.-located analyst and 0 if issued by a local analyst. *Follower* is a dummy variable equal to 1 if an analyst's recommendation change is in the same direction and by the same magnitude as a previous recommendation change from a different analyst for the same firm within a 30-day period. Analogously, *Follower* is equal to zero, if the recommendation change is different in magnitude or direction from a previous recommendation change for the same firm made by other analysts during the previous 30 day. *Country Specialist* is a dummy variable equal to 1 if the analyst is a country specialist, and zero if the analyst is a sector specialist. The measures for county and sector specialization are defined in the variable appendix. Panel B shows the results of pooled cross-sectional fixed-effects estimations for domestic cumulative abnormal returns (CARs) following recommendation upgrades. Control variables are the same as in Table 4. Variable descriptions are provided in the appendix. Columns (1)-(2) show estimation results of when the *US vs Local indicator* is interacted with *Follower* and columns (3)-(4) show estimation results of when the *US vs Local* indicator is interacted with *Country Specialist*. Standard errors are clustered by analyst. The regressions control for fixed effects denoted in the table. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. *t*-statistics are provided in parentheses.