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Analyst Target Price Optimism around the World

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Abstract

In this study, we examine the determinants of the well-documented optimism in analysts' target prices using unique analyst location and institutional data for 11,633 analysts located in 44 countries covering 17,353 firms around the world. We construct both ex ante and ex post optimism measures to explore the factors that influence analyst target price optimism. We find that target price optimism is positively associated with proxies for analysts' conflicts of interest, but negatively associated with country-level institutional infrastructure as characterised by strong investor protection, effective legal enforcement and transparent financial environment. Our results highlight the importance of institutional infrastructure of a country in moderating biased research by analysts.

I. Introduction

Target prices convey sell-side analysts' assessments of the future value of underlying stocks. However, target prices are pervasively optimistic. In the U.S., for example, Asquith, Mikhail and Au (2005) and Brav and Lehavy (2003) both report an average implied annual return of 33% for target price forecasts (relative to current prices) during 1997 to 1999, while Bradshaw, Brown and Huang (2014) find an implied return of 24% for the period of 2000 to 2009. In contrast, the actual US market return based on the CRSP value-weighted index over the period of 1997 to 2009 was 8.1%. In our sample period of 2002-2011, the average implied annual return for our sample target prices across 44 countries is 19%, far in excess of the average realized annual MSCI world index return of only 0.5% over this period.

Perhaps because of this pervasive optimism in target prices, target prices are sometimes portrayed as merely analysts' sales hype by the media and investment managers. For example, Marshall Front of Front Barnett Associates characterized target prices as "purely marketing"¹, and New York Times journalist Gretchen Morgenson won a Pulitzer Prize in 2002 for her coverage of Wall Street, which included her conclusion that "Price targets are hazardous to investors' wealth."² Nevertheless, both anecdotal and empirical evidence demonstrate that target prices and their revisions are significantly associated with stock price movements. The ubiquitous example is Henry Blodget's December 16, 1998 target price of \$400 per share on Amazon when the stock was trading around \$240, which was followed by a 19% increase in Amazon's stock price that day. Similarly, Asquith et al. (2005) find the spread between market reactions to target price upgrades and downgrades is approximately 11%, which is larger than and incremental to other information conveyed in a typical analyst report.

The paradox of well-known optimism in target prices combined with large price impacts suggests that optimism embedded in target prices may not be random. One possibility is that investors are aware of

¹ Marshall Front of Front Barnett Associates LLC, appearing on Los Angeles Times on October 14, 2001 (<http://articles.latimes.com/2001/oct/14/business/fi-56961>).

²<http://www.nytimes.com/2001/08/05/business/market-watch-price-targets-are-hazardous-to-investors-wealth.html?pagewanted=all&src=pm>.

target price optimism, but analysts inject varying levels of optimism into target prices and investors respond conditional on various characteristics of the analyst, firm, or institutional environment. In this study, we focus on the determinants of variation in target price optimism. We hypothesize that target price optimism is associated with numerous characteristics of the analyst, the firm being analyzed, and resident country of the analyst and/or firm. We benchmark a target price against the concurrent stock price to construct *ex ante* measures of optimism, and against future stock price to create *ex post* measures. Our *ex ante* measures include the implied return of the target price and its relative rank within industry and country, while our *ex post* measures include whether and for how long the stock price meets the target price during the forecast horizon.

We construct a unique set of analyst-location data for 11,633 analysts covering 17,353 firms located across 44 countries. These data allows us to identify a number of analyst attributes that are related to information advantage and potential conflicts of interest with the covered firms. For example, we identify analysts who work for pure brokers, analysts who work for brokers that have previous investment banking ties with the covered firms, and analysts who reside in the same country as the covered firms. On one hand, these analysts may provide less optimistically biased target price forecasts due to their information advantage arising from an underwriting relationship or geographic proximity (e.g., Malloy 2005; Ke and Yu 2006; Bae, Stulz and Tan 2008). On the other hand, these analysts may be subject to greater conflicts of interest as they seek to maintain a good relationship with the target firm's management to generate underwriting business or enhance personal career opportunities. Thus, our analysis of variation in target price optimism is meant to capture analyst-specific information advantage and possible conflicts of interest. In addition to classical conflicts of interest proxies, we also consider the impact of indirect investment banking pressure on target price optimism. Analysts may please firms that have greater needs of investment banking business with biased forecasts in earnings forecasts, stock recommendations, and target prices (Bradshaw, Richardson, and Sloan 2006).

We find that target price optimism is exacerbated by analysts' conflicts of interest and external financing needs of target firms. We also find that analysts in countries with stronger institutional infrastructure (i.e., strong investor protection, effective legal enforcement, transparent financial environment, and strong individualism) exhibit less target price optimism. While our results corroborate the findings in the earnings forecasts and stock recommendations literature that potential conflicts of interest contribute to optimistically biased research, our primary contribution is to document institutional channels that moderate analyst forecast optimism.

The unique analyst location data allows us to associate the institutional infrastructure of the country in which an analyst reside with target price forecast optimism. Relying on extensive work in the law and finance literature, we investigate whether investor protection, legal enforcement, financial transparency, economic development and culture are associated with variation in target price optimism. On the one hand, in countries with strong investor protection, effective legal enforcement, and a transparent information environment, analysts might refrain from conflict-of-interest behaviours, because such activities would be deterred by the overall environment or potentially subject them to disciplinary actions or penalties. On the other hand, countries with better developed institutional infrastructures typically have more developed financial markets. In such markets, analysts may face more competition and may be more motivated to provide optimistically biased forecasts to maintain access to managers or signal beliefs. As these two forces work in opposite directions on target price optimism, the net impact of institutional infrastructure on target price optimism is an empirical question. We find that stronger institutional infrastructure moderates analyst optimism, consistent with the former explanation.

We contribute to the analyst forecast and law and finance literatures in several ways. First, we systematically examine the determinants of analyst optimism by constructing measures that capture ex ante and ex post target price optimism. Our paper adds to a growing literature on analysts' target prices, but is distinct in its focus on cross-sectional variation in optimism. Second, our unique analyst location data allows us to associate the institutional infrastructure of the country in which an analyst resides with

target price optimism. The results indicate the importance of institutional infrastructure in moderating such optimism. Thus, while individual analysts appear to have incentives to produce optimistically biased research, country-level institutional infrastructure is a countervailing force that partially offsets the incentives-driven optimism. Finally, our sample includes firms and analysts from a wide array of developed and developing markets, permitting a comprehensive analysis. Further, the heterogeneous country characteristics and large sample of analysts contribute to the generalizability of these results.

In the next section, we briefly review the related literature. Section III describes our data and various proxies for target price optimism. Section IV reports the empirical analyses on the determinants of target price optimism. Section V presents robustness checks, and Section VI concludes.

II. Literature Review

Financial analysts typically provide earnings forecasts, stock recommendations and target prices in their research reports to convey their investment assessment of the covered firms. Although target price is one of the three major components of analysts' research output, much of the literature has focused on earnings forecasts and stock recommendations. As a rough survey, we searched the abstracts within 'Scholarly Journals' on the ABI/INFORM Global database using a combination of "analysts" with "earnings", "recommendation", and "target price" respectively, and found 867, 149 and 14 papers. Only recently has academic research begun examining the determinants and investment value of target prices.

The existing research on analyst target prices largely falls into the following three categories: (i) market impact, (ii) derivation, and (iii) accuracy. In the first category, Brav and Lehavy (2003) examine the market impact of target prices, and find large spreads (approximately 11%) between upward and downward target price revisions. This is much larger than the approximate 6% spread documented for stock recommendations by Womack (1996). Asquith, Mikhail and Au (2005) show that analysts' target prices have investment values incremental to their stock recommendations and all other information conveyed in a typical analyst research report. Likewise, Huang, Mian, and Sankaraguruswamy (2009)

find that portfolios based on changes in both consensus recommendations and target prices are more profitable than those based merely on changes in recommendations or target prices separately.

Regarding the derivation of target prices, Bandyopadhyay, Brown, and Richardson (1995) find that target price forecast revisions co-move with earnings forecast revisions, suggesting analysts' heavy use of earnings forecasts in deriving target prices. Bradshaw (2002) finds that target prices seem based on earnings heuristics and that analysts issue target prices to support stock recommendations. Da, Hong, and Lee (2010) find that the investment value of target price stems from earnings forecasts and the implied discount rates embedded in the forecasts of P/E ratios. Da and Schaumburg (2011) examine target-price based trading strategies, and conclude that the informativeness of target prices mainly derives from analysts' ability to assess the relative pricing of stocks within a specific industry. Gleason, Johnson and Li (2013) examine the use of valuation model to justify target prices and find that those forecasts based on more rigorous models have more investment value.

Finally, Bonini et al. (2010) and Bradshaw, Brown and Huang (2014) examine the 'accuracy' of target prices in Italy and the U.S., respectively. Both studies document that analysts have limited ability to predict prices and argue that the lack of accuracy is possibly due to the fact that target price forecasting is largely an unmonitored activity. Bradshaw, Brown and Huang (2014) suggest that the limited statistical evidence of some analysts to provide accurate forecasts over time could simply reflect their persistent differences in forecast optimism. Bonini et al. (2010) find that analyst target price forecasts are systematically biased by factors such as boldness, firm size and market momentum in the Italian market. Bilinski, Lyssimachou, and Walker (2013) analyze the accuracy of target prices in 16 countries, and find that analyst characteristics and affiliation are associated with target price accuracy, boldness, and revision frequency. Kerl (2011) finds that target price accuracy is negatively related to the level of the target price and firm-specific risk in the German market. These papers examine analyst target prices in different regions and countries, so the ability to compare results across studies or countries is limited because of the underlying differences in institutional environment in which the firms and analysts are located. As an

example, Bilinski, Lyssimachou and Walker (2013) report that bank affiliation increases target price accuracy, while Kerl (2011) finds that such an affiliation has no effect on target price accuracy.

Our paper is closely related to studies that relate information advantage and conflicts of interest to analyst forecast performance. For example, Bae, Stulz and Tan (2008) find that analysts residing in a country make more precise earnings forecasts for firms in that country than do non-resident analysts; moreover, the local analyst advantage is higher in countries where earnings are smoothed more, less information is disclosed by firms, and firm idiosyncratic information explains a smaller fraction of stock returns. Chen and Martin (2011) report that analysts are more accurate after the underlying firms borrow from their affiliated banks. The increase in forecast accuracy is more pronounced for borrowers with greater information asymmetry, and for borrowers with bad news and high credit risk. Their results suggest that there is information spillover from commercial banking division to the equity research division within the larger banks with diverse operations. On the other hand, Arand and Kerl (2012) show that business ties or personal links are positively associated with target prices, consistent with conflicts of interest driving target price optimism.

A large literature concludes that optimism in stock recommendations is due to the underlying incentives of analysts or their employers, but the evidence is mixed for earnings forecasts.³ Mehran and Stulz (2007) point out that reputation, labour market, competition, institutional investors, and legal and regulatory actions could mitigate the adverse impact of conflicts of interest. Ke and Yu (2009) find that the disconnection between individual analysts' stock recommendations and earnings forecasts is greater for analysts who face investment banking pressure, when analysts follow firms with heavier insider selling or higher institutional ownership, when the analysts' brokerage house relies more on trading commissions, or in periods with more extreme investor sentiment. We extend these findings to target

³ See for example Dugar and Nathan (1995), Lin and McNichols (1998), Michaely and Womack (1999), O'Brien, McNichols and Lin (2005), Clarke, et al. (2006), Chan, Karceski, and Lakonishok (2007), Ljungqvist et al. (2007), Barber, Lehavy, and Trueman (2007), Agrawal and Chen (2008), Kadan, et al. (2009) and Barniv, et al. (2009) for a discussion of conflicts of interest and analyst earnings forecast and stock recommendations.

price forecasts, and use the cross-country setting to investigate the effectiveness of institutional infrastructure in tempering analysts' tendency for optimistic forecasts.

A growing number of studies document that country characteristics significantly affect the extent of analyst following and the properties of analyst forecasts (Jegadeesh and Kim 2006; Bae, Stulz and Tan 2008; Balboa, Gomez-Sala, and Lopez-Espinosa 2009, Barniv, et al. 2010, Tan, Wang, and Welker 2011). Most of these studies, however, focus only on analyst earnings forecasts, and provide inconclusive results regarding the impact of country characteristics on forecast-related measures such as forecast accuracy. For example, while Chang, Khanna, and Palepu (2000) find evidence that a country's legal system explains variation in earnings forecast accuracy, Ang and Ciccone (2001) reach the opposite conclusion. Our paper is most closely related to Bilinski et al. (2013), who also examine the impact of institutional and regulatory factors on analyst target price forecasts. We differ from their study in the following ways. First, while Bilinski et al. (2013) focus on the determinants of target price accuracy in a sample of firms in 16 developed countries, we focus on the determinants of optimism in target price forecasts by analysts from both developing and developed countries, and explore mechanisms that mediate such biases. Second, while Bilinski et al. (2013) find the firm-country characteristics in disclosure, legal system, culture, and IFRS regulation affect target price accuracy, we resort to a unique analyst-location dataset to relate target price optimism to a broader range of analyst-country characteristics – the institutional environment to which the analysts are subject. Following the law and finance literature (see for example La Porta, et al. 1998; Lang, Lins and Miller, 2004; Doidge, Karolyi and Stulz, 2007; and Djankov, et al. 2008), we examine whether different aspects of country-level institutional infrastructure such as investor protection, legal enforcement, financial environment transparency and individualism have any impact on target price optimism.

III. Data and Key Variables

A. Sample

Table I describes our variables and data sources. Our sample selection begins by identifying analysts' target price forecasts that are revisions to their own forecasts issued during one week to 12 months earlier based on the I/B/E/S price target detail file during 2002–2011, for both U.S. and non-U.S. firms.⁴ From Compustat, we obtain daily stock prices, the stock-split adjustment factor, market capitalization, and annual financial data. We use the latest closing price within three days before the announcement date of an analyst's target price as the concurrent stock price and use it to compute the implied return of the target price. We adjust for discrepancy in the underlying currency between Compustat and I/B/E/S using the daily exchange rate from Compustat. We also obtain stock prices from the I/B/E/S monthly summary file to ensure the consistency of stock prices between Compustat and I/B/E/S. The closing dates for monthly stock prices from the I/B/E/S summary file usually fall on the third Thursday of the month. We keep only those target price forecasts whose concurrent stock prices (after considering the split adjustment factor) from Compustat are within 70% to 400% of the monthly stock prices from the I/B/E/S.⁵

[Table I about here.]

We use the annual volumes of Nelson's Directory of Investment Research for 1998-2008 to identify the country locations of financial analysts.⁶ The Nelson's Directories provide information on nearly 1,700 research firms with approximately 40,000 equity analysts covering publicly traded companies located around the world, with the full names and city locations for equity analysts and their associated research firms. We use the I/B/E/S broker translation file to obtain names for analysts and brokers included in the I/B/E/S detail file. We then follow the same procedure as Bae, Stulz, and Tan (2008) and Bae, Tan, and Welker (2008) to match these broker and analyst names to those from the

⁴ The target price data in I/B/E/S prior to 2002 is dominated by U.S. sample. Since there is a need to maintain a degree of cross-country variations in our study, we drop the pre-2002 data. Adding the pre-2002 data, however, does not change the conclusions of the paper.

⁵ These cutoffs correspond roughly to the bottom and top five percentiles in the distribution of the ratios between the stock prices from Compustat and the I/B/E/S.

⁶ Nelson Publishing, Inc. stopped producing its Directory of Investment Research after 2008. We assume that analysts do not change their country locations between then and the end of our sample period, 2011.

Nelson's Directory of Investment Research, to obtain country locations for the I/B/E/S analysts.⁷ Since we are interested in the impact of analyst and country characteristics on target price optimism, we delete forecasts issued by analysts for which we cannot determine their location. We further require each firm country to have at least ten firms, and each analyst-country to house at least five analysts to make meaningful comparison of analyst forecast behaviour across countries. Our final sample includes 11,663 distinct analysts located in 44 countries with 1,129,974 target price forecasts on 17,353 firms during the period of 2002-2011.

B. Measures of Target Price Optimism

Target prices explicitly convey analysts' investment assessment of underlying stocks. The traditional wisdom with forecast horizon of target price is 12 months starting from the date of issuance.⁸ We find, however, that the average (median) interval for target price forecast revisions is 89 (71) days for our sample. Figure 1 shows the distribution of target price revision interval. Most target prices are revised within 90 days of issuance (in fact, 61% of target prices in our sample have less-than-90-days revision interval).⁹ In light of the traditional wisdom and the observed revision frequency, we choose six-month as the primary horizon to measure target price optimism. In untabulated results, we also use both 12-month and 3-month horizons as sensitivity checks, and find that our conclusions remain qualitatively the same.

[Figure 1 about here.]

An optimistic target price is one where the target price is above the current market price. Thus, a natural measure of optimism is the distance between target price (TP) and current stock price (P), $TP - P$,

⁷ We obtained our broker translation file directly from I/B/E/S as of September 2005. After that date, we supplement using the I/B/E/S recommendation detail and target price files, which include analyst names and abbreviated broker IDs, but not broker full names. Where possible, we confirm broker names using Nelson's Directory of Investment Research.

⁸ For example, in its ratings disclosure (http://www.goldmansachs.com/research/equity_ratings.html), Goldman Sachs states: "Price targets are required for all covered stocks. The return potential, price target and associated time horizon are stated in each report..." When a security is rated as "Attractive," "[t]he investment outlook over the following 12 months is favorable relative to the coverage group's historical fundamentals and/or valuation."

⁹ By target price revision, we meant that the analyst either reiterates the previous target price or revises the previous target price to a different value. Only 4% of the sample observations are reiterations. Excluding reiterations barely changes the distribution of the revision interval.

defined as $TP/P - 1$, which is the implied return for a firm's stock price. A larger value of $TP2P$ indicates more optimism. This implied return measure is not adjusted, however, for potential risks associated with each stock. To ameliorate this concern, we make two adjustments. Our first adjustment follows the popular industry-adjusted return method in event studies. Specifically, we define $TP2P_{Rank}$ as the rank of $TP2P$ within its 2-digit-SIC industry in any given year. $TP2P_{Rank}$ is coded between 0 and 99. In our second adjustment, we remove country-industry return from $TP2P$. Specifically, we define $TP2P_{Adj}$ as $TP2P$ minus the previous six-month cumulative average return of the firms from the same country and industry.¹⁰

$TP2P$, $TP2P_{Rank}$, and $TP2P_{Adj}$ are ex ante measures of optimism, where the degree of optimism is revealed at the time of target price forecasts. We are also interested in how optimism is materialized ex post during the forecast horizon. As previously discussed, we choose six months as our test period based on the observed revision frequency of target prices. If a target price is more optimistic ex post, we would expect that market price rarely meets the target price during the next six months. Correspondingly, we define $Ratio6$ as the percentage of trading days in the next six months after the TP forecast that the stock price is lower than TP ; $TPNOTMET$ is a dummy variable that equals one if the maximum stock price over the next six months is lower than TP , and zero otherwise. $TPNOTMET$ is an inverse measure of target price accuracy routinely used in the literature (e.g., Bradshaw, Brown and Huang 2014).

Note that $TPNOTMET$ is potentially problematic if a target price is issued below the current price and the actual price subsequently drops below the target price.¹¹ Because the maximum stock price is not lower than TP , $TPNOTMET=0$. This target price would not be coded as ex post optimistic, although it is (i.e., the *target price* forecast is too high relative to realization). In our sample, however, we have only 1.4% (6.2%) of target price with an implied return between -0.01 (-0.05) and 0. Nevertheless, if we

¹⁰ Some countries may have too few firms covered in Compustat for meaningful industry returns to be constructed. Thus we use Fama-French 17-industry classification instead of 2-digit SIC codes to compute country-industry returns. When there are fewer than 5 firms for a country-industry, we use global industry returns instead.

¹¹ If the subsequent price movement is upwards or flat, or if the price falls but not to the level of TP , then the target price would be ex post pessimistic, and $TPNOTMET$ would be coded as 0 (because the maximum stock price is *not* lower than TP). This would properly characterize the target price as not optimistic.

delete these observations or skip the first one or three months after the target price forecast date when coding *TPNOTMET* and *Ratio6*, our conclusions are unaffected.

To summarize, we consider three ex ante optimism measures (*TP2P*, *TP2PRank*, and *TP2PAdj*) and two ex post optimism measures (*Ratio6* and *TPNOTMET*). Table II reports summary statistics. In Panel A, the mean implied return of target prices *TP2P* is 0.19, which is almost double the overall equity market return of around 10% per annum in the U.S during the past century (Mehra and Prescott 2003). The degree of optimism is similarly corroborated by *TP2PAdj*, which has a mean value of 0.15, after the historical market adjustment. Both ex ante measures suggest pervasive ex ante optimism around the world.

[Table II about here.]

The mean value of *Ratio6* is 0.72, indicating that for 72% of trading days in the subsequent six months, the stock price remains below the target price. *TPNOTMET* (i.e., dummy that target price is never met) has a mean value of 0.43, indicating that 43% of target prices are not met at any time during the next six months.¹² These metrics also indicate pervasive optimism when we benchmark the target prices against the realized stock prices during the forecast horizon. Panel B of Table II shows that both ex ante and ex post optimism measures are highly correlated with each other. The correlations between ex ante and ex post optimism measures are the lowest, suggesting that the ex ante and ex post measures capture different aspects of analyst target price optimism.

To show the distribution of target price optimism, Figure 2 plots the percentage histogram of *TP2P*. The figure confirms that the majority of target prices exhibit *TP2P* greater than zero. In fact, 61.8% of target prices have implied returns greater than 0.10. If we treat positive implied returns as being

¹² In our regressions with *Ratio6* as the dependent variable, we use ordinary least squares. To address the large left-tail of *Ratio6*, we also converted *Ratio6* to (i) a dummy variable and use logistic regressions and (ii) quartile, quintile, or decile ranking and use Tobit regressions. Conclusions remain the same.

optimistic and negative implied returns as being pessimistic, Figure 2 shows that analysts are much more likely to be optimistic than to be pessimistic.

[Figure 2 about here.]

Table III shows the summary statistics of our final sample by country (Panel A) and by year (Panel B). The final sample includes firms from 44 countries, with the U.S., Canada, the U.K. and Japan being the top four countries with the largest number of firms. The U.S and the U.K. are also the top two countries with the largest number of analysts in residence, followed by Canada, Korea, Japan, and France. The countries with the highest target price implied return (*TP2P*) are Russia, Brazil, Argentina, and Turkey, each in excess of 30%. Poland has the lowest *TP2P*, followed by New Zealand and Finland. The average *TP2P* across our sample countries is 19%. The magnitude of target price optimism for our sample is consistent with what has been reported for individual countries in the literature. For example, in our sample of 2002-2011, mean *TP2P* for the U.S. is 0.20, relative to 0.24 in Bradshaw, Brown and Huang (2014). The somewhat lower *TP2P* in our sample is due to a different sample period, notably excluding 2000-2001, where the largest values of *TP2P* are concentrated in Bradshaw, Brown and Huang's (2014) sample.

[Table III about here.]

Panel B of Table III shows the sample distribution by year. For each year during 2002 to 2011, we have an average of 112,997 target price forecasts by 5,279 analysts for 8,311 firms. The number of analysts and firms peaked, respectively, in 2007 and 2008. The number of sample countries is 23 in 2002, and increases to 44 by 2006. For both *TP2P* and *Ratio6*, we see the highest values in 2002 and 2008, and the lowest in 2005. In our sample period, 2002 and 2008 experienced severe market downturns, which are associated with high values of both the ex ante measure, *TP2P*, and ex post measure, *Ratio6*. In the market rebounds of 2003 and 2009, *TP2P* and *Ratio6* reverse to relatively low levels, indicating time

variability in target price optimism. *TP2PAdj* and *TPNOTMET* in Panel B of Table III also show large variation in analyst optimism over the years.

To control for contemporaneous optimism in analysts' earnings forecasts, we obtain the nearest annual earnings forecast by the same analyst for the same firm within nine months of the target price issuance date from the I/B/E/S detail file.¹³ We define earnings forecast optimism, *optimism_eps*, as $100 \times (\text{EPS Forecast} - \text{Actual EPS}) / \text{Price}$. The average *optimism_eps* in our sample is 28 basis points; as a gauge of the economic significance, if we assume a P/E of 20x, optimism of 28 basis points translates into 5.6% of price. This amount is about half of the 10-12% of price reflected by *TP2P*. The full-sample correlation between *TP2P* and *optimism_eps* is only 0.05, suggesting that target price optimism is distinctly different from earnings forecast optimism.

C. Analyst and Firm Characteristics

We examine three analyst traits that are related to their information advantage and conflicts of interest: *purebroker*, *underwriter*, and *local*. The variable *purebroker* takes the value of one if the brokerage house that employs an analyst is a pure broker that has no investment banking business based on the Nelson's Directory of Investment Research; *underwriter* takes the value of one if an analyst's employer served as either lead underwriter or co-manager for the covered firm in the past three years based on equity and debt offering from Thomson One Banker; and *local* takes the value of one if an analyst resides in the same country as the target firm's headquarter country. Analyst locations are from the Nelson's Directory of Investment Research, while country locations for firm headquarters are from Compustat.

The predicted association between the analyst traits and target price forecast optimism is ambiguous given the offsetting nature of analysts' conflicts of interest versus a possible information advantage. While conflicts of interest presumably motivate analysts to infuse target prices with

¹³ The average time interval is 25 days and the median is 0 day. Our results remain qualitatively the same if we use six months or 12 months as cutoff date.

overoptimism, an information advantage would reduce the uncertainty about the target firms and lower the overoptimism. For example, local analysts may understand the firm better due to geographical proximity or better information about the firm; however, this information advantage may be offset or even dominated by personal conflicts of interest to secure corporate networking and career opportunities. Likewise, analysts having investment banking ties with a target firm may enjoy an information advantage and provide less biased and more reasonable target prices; however, such ties may also cause these affiliated analysts to inflate the target prices to secure future banking business. Finally, the pressure to generate trading commissions would motivate analysts to issue optimistic target prices.¹⁴

Consistent with the view that conflicts of interest lead to forecast optimism, certain types of firms might be more likely to induce analysts to exhibit greater optimism. In particular, analysts may identify firms that have greater needs of investment banking and solicit the business by issuing more favorable target prices. Bradshaw, Richardson, and Sloan (2006) document that external financing needs are positively associated with optimism in analyst forecasts of earnings, stock recommendations, and target prices. They further report that this relation is stronger for firms with equity offerings relative to debt offerings. In addition, Teoh et al. (1998a, 1998b) report that firms manage accruals to increase earnings prior to financing activities of IPO and SEO. We employ a measure of firm-level earnings management as a proxy for the capital market pressures for optimistic expectations. We thus expect target price optimism to be positively associated with the following firm traits: $\Delta XFIN$ (change in equity and debt scaled by total assets),¹⁵ $\Delta EQUITY$ (change in equity scaled by total assets), and $earnmgmt_firm$ (firm-level earnings management level computed as the absolute value of discretionary accruals from Modified Jones Model).

D. Country Characteristics

¹⁴ Cowen, Groyberg and Healy (2006) find that pure brokers tend to issue more optimistic earnings forecasts in order to generate trading commissions.

¹⁵ We also examined other firm financing variables such as Frank and Goyal's (2003) financing deficit measure and De Franco, Hope, and Larocque's (2012) external financing measure, and our results remain qualitatively the same.

Our primary contribution is to examine how the institutional framework of a country is associated with optimism of analysts' target prices. We consider country characteristics that are closely related to three different aspects of a country's institutional infrastructure: (1) investor protection and legal enforcement, (2) financial transparency, and (3) economic development and culture. Table I defines individual country characteristics and references data sources. We hypothesize that better institutional features are associated with lower target price optimism.

A country with strong investor protection and legal enforcement may impose higher costs on conflict-of-interest behavior (or at least may create an environment that tempers such behavior). We first consider different aspects of investor protection under a country's legal system by including the legal origin (*commonlaw*), the overall score of legal system and property rights (*legsys*), a measure of law and order (*rule*), efficiency and integrity of the legal environment (*judicial*), impartiality of courts (*judimp*), judicial independence (*judindp*), the quality of investor protection captured by the inverse of corruption in government (*anti-corruption*), protection of property rights (*propprot*), and an index that measures the legal protection of minority shareholders against expropriation by corporate insiders (*anti-dealing*). High values for these variables indicate stronger investor protection and more effective legal enforcement.

Our second group of institutional characteristics concerns financial transparency. A transparent financial system gives rise to more accurate information flow, which presumably reduces information uncertainty and enhances the creditability of target prices. We include the following financial transparency variables: an index of accounting disclosure for a country (*disclosure*), and an index of country-level earnings management (*earnmgmt*). *Disclosure* is positively related to financial transparency, whereas *earnmgmt* is negatively related to financial transparency if it captures the overall opacity of a country's financial reporting. Our country-level measure, *earnmgmt*, is an overall indicator of financial transparency; our firm-level measure, *earnmgmt_firm*, captures idiosyncratic firm-level earnings management. Leuz, Nanda and Wysocki (2003) argue that corporate insiders use earnings management to conceal firm performance from outsiders and find that investor protection reduces country-level earnings

management. Finally, we use GDP per capita to measure the economic development of a country, and employ Hofstede's (2001) cultural index to introduce a measure of culture - individualism – as a control for systematic differences in acceptable optimism not captured by our other covariates.

E. Univariate Comparison of Target Price Optimism

Table IV presents a univariate comparison of target price optimism conditional on the analyst, firm and country characteristics. For analyst and firm characteristics, we separately partition the sample into two groups based on the median value of each variable for every analyst-country and year. For country-level variables (other than binary variables), we separately partition the sample into two groups based on the median value of each variable by country within each every year. Briefly, we make a number of observations. First, optimism is positively associated with *underwriter* and *local*, consistent with well-known allegations of conflicts of interest and possible local information advantage. Optimism is significantly positively associated with firms' external financing ($\Delta XFIN$ and $\Delta EQUITY$), and to a lesser degree with *earnmgmt_firm*. In contrast, better country-level institutional infrastructure is generally associated with significantly reduced levels of target price optimism. Better investor protection and legal enforcement (*judicial*, *legsys*, *rule*, *judimp*, *anti-corruption*, *propprot*, *anti-dealing*) and higher financial transparency (*disclosure*) are negatively associated with almost all measures of target price optimism. Economic development and culture variables are also negatively associated with optimism proxies, especially with *TP2PRank*. Overall, Table IV provides systematic evidence that some analyst, firm, and country characteristics are strongly associated with variation in target price optimism.

[Table IV about here.]

IV. The Determinants of Target Price Optimism

A. Benchmark Regressions

In this section, we examine the determinants of target price optimism in a multivariate regression framework. We control for firm and analyst characteristics that previous literature has shown to affect

analyst performance.¹⁶ Our controls for firm characteristics include firm size (*logmv*), market-to-book (*mb*), revenue growth (*rev_growth*), intangible asset intensity (*intangible*), the number of analysts that cover the firm (*nanalyst*), stock turnover (*turnoverpre12*) and return standard deviation (*retstd12*) over the previous year. The analyst characteristics include earnings forecast optimism (*optimism_eps*), firm experience (*firmex*), general experience (*genex*), number of firms covered by the analyst (*nticker*), and the size of the brokerage house (*brsize*). Since target prices are frequently updated, we control for the extent of target price revision from the previous target price ($\Delta TP2TP$) and the cumulative stock return during the target-price revision period (*return_rev*). Finally, we add the previous 12-month cumulative MSCI ACWI world-index return (*ACWI12*), because the average degree of optimism could be correlated with the recent stock market movement.¹⁷ We also control for time and industry effects by including forecast year, month and industry indicator variables. We adjust standard errors for two-way clustering at the firm and year levels to correct for cross-sectional and time-series dependence. Our regression model takes the following general form:

$$\begin{aligned}
 Optimism = & \alpha + \beta_1 logmv + \beta_2 mb + \beta_3 rev_growth + \beta_4 intangible + \beta_5 nanalyst \\
 & + \beta_6 turnoverpre12 + \beta_7 retstd12 + \beta_8 \Delta TP2TP + \beta_9 return_rev + \beta_{10} optimism_eps + \\
 & \beta_{11} firmex + \beta_{12} genex + \beta_{13} nticker + \beta_{14} brsize + \beta_{15} ACWI12 + \varepsilon
 \end{aligned} \tag{1}$$

where the dependent variable is one of our proxies for target price optimism. All regressions are estimated using OLS except when *TPNOTMET* is the dependent variable, in which case we use logistic regression. All variables are defined in Table I. In Equation (1), we suppress subscripts with the understanding that each of the observations involves analyst *i*'s target price forecast on firm *j* at day *t*. The independent variables are measured using information up to the forecast date.

¹⁶ Bradshaw, Brown and Huang (2014) demonstrate the importance of controlling for firm size and price standard deviation in their analysis of target prices in the US. Bonini et al. (2010) also control for return momentum. Clement (1999) shows that earnings forecast accuracy is related to many analyst characteristics, which we also include.

¹⁷ The ACWI index reflects the value-weighted average market returns across both emerging and developed markets around the world. The data are downloaded from the Morgan Stanley website.

Panel A of Table V reports the results of benchmark regressions on the determinants of target price optimism. Columns (1) to (3) show the regression results for the three ex ante optimism measures (*TP2P*, *TP2PRank* and *TP2PAdj*); columns (4) and (5) show the results for the ex post optimism measures (*Ratio6* and *TPNOTMET*). Due to space constraints, we do not report coefficients on industry and time dummies.

[Table V about here.]

Among firm characteristics, Panel A of Table V indicates that firm size is negatively associated with the ex ante optimism measures. However, firm size is *positively* associated with ex post optimism measures (Columns (4) and (5)). Because the difference between the ex ante and the ex post optimism measures lies in the stock price scalar, one potential explanation for these opposite results is that they are driven by the differing associations between size and the stock price scalars. We find that this is indeed the case. For the ex post measures, the correlation between firm size and the inverse of stock price at the end of six months after target price issuance date is only -0.04, whereas for the ex ante measures, the correlation between firm size and the inverse of concurrent stock price is -0.35. The larger negative correlation of the scalar effect in the ex ante measures leads to a negative coefficient of firm size on ex ante optimism.

Among other firm characteristics, we find that analysts are less optimistic for stocks with high market-to-book ratio and higher analyst following, but are more optimistic for stocks with high recent revenue growth. The coefficient on $\Delta TP2TP$ is significantly positive, while the coefficient on *return_rev* is significantly negative. As expected, optimism in earnings forecasts is positively related to both ex ante and ex post target price optimism. Analysts with longer forecasting experience also provide more optimistic target prices, while those working for larger brokerage house are less optimistic. The overall past 12-month market return *ACW12* is negatively associated with ex ante optimism. This reflects the fact that contemporaneous analyst optimism is lower (higher) in up (down) markets. However, possibly

due to the long-run price reversal over one and a half to five years (DeBondt and Thaler, 1985), lagged 12-month market returns are positively associated with ex post optimism. There is no consistent sign for other analyst and firm traits in the determinants of target price optimism. In summary, Panel A of Table V indicates that our optimism measures are related to a number of analyst and firm characteristics and recent stock market movement.

B. The Impact of Conflicts of Interest, External Financing, and Country Characteristics on Optimism

As previously discussed, we are primarily interested in the association between target price optimism and analyst traits that are related to conflicts of interest or to information advantage, firm traits that are related to external financing, and three categories of analyst-country characteristics — investor protection and legal enforcement, financial transparency, and economic development and culture. Because many of these characteristics are highly correlated, we add each trait individually to the benchmark regression in Equation (1) to avoid confounding effects:

$$Optimism = \alpha + \gamma_1 Trait + \sum \eta \times Controls + \varepsilon \quad (2)$$

where *Trait* denotes an analyst, firm or country characteristic. We include all of the controls in Equation (1) and η is the vector of coefficients for those controls.

Panel B of Table V presents these results. We use the same column layout as we do for the benchmark regressions in Panel A of Table V. For brevity, however, we do not tabulate the results on the control variables which are virtually identical to those in Panel A of Table V. Recall Table IV that presented univariate comparison of target price optimism across partitions based on each characteristic. The coefficient on each *Trait* variable in Equation (2) and tabulated in Panel B of Table V captures the same effect as that of the univariate results, but Equation (2) is estimated with continuous variables where applicable and includes the controls from the benchmark regression in Panel A of Table V.

We first discuss the analyst traits. The coefficient of *purebroker* is significantly positive in two out of five optimism measures (each in ex ante and ex post optimism) and not significant in other cases. Thus we find limited support that some form of optimism is related to trade generating incentives of analysts. The coefficients on *underwriter* are reliably positive and significant across all optimism measures, indicating that analysts employed by underwriters and co-managers of target firms issue overly optimistic target prices, consistent with the conflicts of interest hypothesis.

The coefficient on *local* is significantly positive for two out of five optimism measures. In the next two specifications, we partition local analysts into those hired by foreign brokers (foreign-local) and those hired by local brokers (pure local), and create a dummy variable for each type of local analysts denoted as *foreign-local* and *purelocal*, respectively. We find that the coefficient on *foreign-local* is negative and significant for four of five optimism measures, whereas the coefficient on *purelocal* is positive and significant for all five. These results suggest pure local analysts are more subject to conflicts of interest, perhaps due to the pressure of local social networks. Collectively, the effects of these two types of local analysts offset each other, rendering the aggregated effect of *local* to be somewhat weaker. Overall, however, the results within the top section of Panel B suggest the impact of conflicts of interest dominates that of information advantage.

Turning to financing-related firm traits, we find that both $\Delta XFIN$ and $\Delta EQUITY$ are significantly positively related to target price optimism. Consistent with Bradshaw, Richardson and Sloan (2006), external financing needs are strongly associated with analyst optimism. The coefficients on *earnmgmt_firm* are also significantly positive for most measures of optimism, suggesting analysts are more optimistic for firms that manipulate earnings (a proxy for capital market pressure for optimism). Collectively, these results suggest that indirect investment banking pressures, as evidenced by firms' external financing needs, are associated with greater target price optimism.

Having shown that conflicts of interest appear to exacerbate analyst optimism, we next examine the impact of institutional characteristics on target price optimism. Within investor protection and legal enforcement category we include legal origin (*commonlaw*), the overall score of legal system and property rights (*legsys*), the efficiency and integrity of legal enforcement (*rule*, *judicial*, *judimp*, and *judindp*), and various measurement and control of investor protection including corruption in government (*anti-corruption*), protection of property rights (*propprot*), and the control of self-dealing (*anti-dealing*). These nine investor protection variables combine with five optimism measures into 45 separate regressions. Except for two regressions for the independent variable *commonlaw*, one for *rule*, and one for *corruption*, the coefficients on these traits are all negative and statistically significant. This is strong evidence that country-level investor protection and legal enforcement discipline analysts from issuing overly optimistic target price forecasts.

Turning to country-level financial transparency, we find that forecast optimism is inversely related to the degree of accounting disclosure (*disclosure*), and positively related to the degree of country-level earnings management (*earnmgmt*). Because more accounting disclosure and lower country-level earnings management indicate more financial transparency, these results are consistent with country-level financial transparency reducing target price optimism.

Finally, we examine proxies for economic development and culture. We find that the coefficient on GDP per capita (*gdpp*) to have inconsistent signs and not significant in any of the regressions, while the coefficients on the developed country indicator (*developed*) are negative and significant in four of five regressions. The variable *usholdgdp* measures U.S. investors' overseas holding of equity in a country scaled by local market GDP, and captures the economic openness of a country and foreign investors' interest in the country. The coefficients on *usholdgdp* are negative and significant in four of five regressions. Since developed countries usually have more established investor protection and effective legal enforcement, the mixed findings on economic development are interesting, as they suggest that it is better institutional infrastructure, rather than the degree of wealth, that disciplines analysts from providing

overly optimistic target price forecasts. The proxy for cross-sectional variation in cultural effects captured by individualism (*IDV*) exhibits significantly negative coefficients in four of five specifications, consistent with individualism curbing target price optimism.

Overall, the results in Panel B of Table V are consistent with the following. First, analysts' conflicts of interest are associated with more target price optimism. Second, many of our proxies for better institutional infrastructure are negatively associated with target price optimism. Thus, a countervailing effect is attributable to stronger country-level institutional infrastructures – such as investor protection, legal enforcement, a transparent financial environment, and high individualism. The takeaway is that the institutional infrastructure of a country plays an important role in disciplining analysts from biased research.

V. Robustness Checks

A. Subsample of Firms Covered by Both Local and Foreign Analysts

Ideally, to best capture the moderating effects of a country's institutional infrastructure, we would like to isolate firms to assess whether optimism across analysts is indeed induced by institutional features of a country in which the analysts are domiciled. To the extent that local (foreign) analysts are subject to local (foreign) laws and rules, firms covered by both local and foreign analysts provide a reasonable experiment to capture the moderating effects of institutional infrastructure. Thus, we create a subsample of firms covered by both local and foreign analysts. This subsample includes sets of analysts covering the same firms, but their resident countries' laws and other institutional characteristics will vary. This subsample is approximately half the size of our primary sample.

Panel A of Table VI presents a replication of our primary tests for this subsample. For completeness, we also report the mediating effects of analyst and firm traits. We report regression results only for the ex ante measure *TP2P* and the ex post measure *Ratio6*. The results for the country-level institutional traits, including investor protection and enforcement variables, financial transparency

variables, and economic development and culture variables, are qualitatively the same as those in Panel B of Table V for the full sample. These results offer further support to our main conclusion that target price optimism is mitigated by better institutional infrastructure. Interestingly, we also note that in contrast to Table V (the full sample), where the coefficient on *local* is only positive and significant for ex post optimism measures, in this subsample the coefficient of *local* is positive and significant for both ex ante and ex post optimism measures. The evidence indicates that local analysts do issue more optimistic target prices relative to foreign-domiciled analysts when covering the same firms.

[Table VI about here.]

B. Moderating Effects at the Firm-Analyst-Year Level

In our previous regressions, we pool all observations. Although we use two-way cluster adjustment of standard errors at the firm and year level, our results may still tilt towards analysts who provide a higher frequency of forecasts during the year. To address this concern, we collapse observations by the mean values of variables at the firm-analyst-year level, which allows only one observation per analyst per firm-year. Doing so reduces the number of observations from the full sample observations of 1,129,974 to 422,436 (i.e., on average, each analyst issues three target prices per year for a firm). We report the regression results for our two main proxies of optimism in Panel B of Table VI. The results on the mediating effects of analyst, firm and analyst-country traits are qualitatively the same as those of the full sample in Panel B of Table V.

C. Subsample of Non-US Analysts

Our full sample is dominated by U.S. analysts, who provide roughly one third of target price forecasts. To examine whether our results are disproportionately affected by U.S. analysts, we remove all U.S. analysts from the sample and examine the subsample of non-U.S. analysts only. In untabulated results, we find that the main inferences are qualitatively the same as those of the full sample.¹⁸

¹⁸ We partition the sample by firm locations and find similar results in non-U.S.-headquartered firms.

D. The Recent Financial Crisis

In Panel C of Table VI, we consider the impact of recent financial crisis on target price optimism to examine whether temporal variation in target price optimism changes any of our primary results. We partition the sample into crisis period and non-crisis periods, where the crisis period is based on the NBER recession period of December 2007 to June 2009. Except for *purelocal*, *rule*, and *anti-corruption*, our conclusions regarding conflicts of interest and stronger institutional infrastructure remain qualitatively the same for both non-crisis and crisis periods.

E. Principal Component Analysis

In our previous analyses of analyst, firm and country characteristics, we introduce each characteristic separately into the benchmark regression. As a final robustness check, we introduce all characteristics into one multivariate regression and examine their simultaneous effects. Due to high correlations among many variables, especially the country-level characteristics, we construct principal components for each of analyst traits, firm traits, and country characteristics. We choose one principal component for analyst traits and firm traits, respectively, and two principal components for country characteristics. In constructing the principal components, we adjust the signs of the input variables so that the principal components of analyst and firm traits have an unambiguously positive predicted sign, and the principal components of country characteristics have an unambiguously negative predicted sign.¹⁹ Table VII provides the results. We observe that the sign of the first principal component of each group is as expected, whether we treat each group independently or jointly. The second principal component of the country characteristics is not significant. We conjecture that this arises because the first principal

¹⁹ For example, the financial transparency variable *earnmgmt* is hypothesized to have positive sign on optimism while the rest of the country characteristic variables are hypothesized to have negative sign. In constructing the principal component of country characteristics, we use the negative of *earnmgmt* as an input variable.

component of the country characteristic captures most of the relevant cross-country variation associated with target price optimism.²⁰

[Table VII about here.]

VI. Conclusion

Using a unique analyst-location data that include 11,663 analysts from 44 countries covering 17,353 firms, we examine the impacts of analyst, firm and country characteristics on target price optimism. To measure the degree of optimism, we propose both ex ante and ex post optimism measures that capture (i), the implied return of the target price and (ii), whether or for how long the target price is met over the forecast horizon. We identify local analysts and analysts that are affiliated with underwriters, two properties that characterize conflicts of interest and information advantage. We find evidence that conflicts of interest dominate information advantage in analysts' issuance of target prices. We also find that firms with greater external financing needs experience heightened analyst optimism.

We believe our most important contribution is to examine how the institutional infrastructure of a country is associated with the optimism of their target prices. We consider country characteristics that are closely related to three different aspects of a country's institutional infrastructure: investor protection and legal enforcement, financial transparency, and economic development and culture. We find that analyst optimism is attenuated by stronger institutional infrastructure. Our results suggest that country-level institutional infrastructure is an important mechanism in disciplining analysts from providing optimistically biased research. Analyst optimism in target prices is exacerbated by conflicts of interest and investment banking pressures but is mediated by country-level institutional infrastructure. These results should be of interests to investors and policy makers who are interested in the efficient flow of information in capital markets and the possible negative effects of biased research.

²⁰ In the 15 correlations of the first principal component of country characteristics with each individual country characteristic, 12 correlations exceed 0.60; whereas the corresponding number for the second principal component of country characteristics is only 3.

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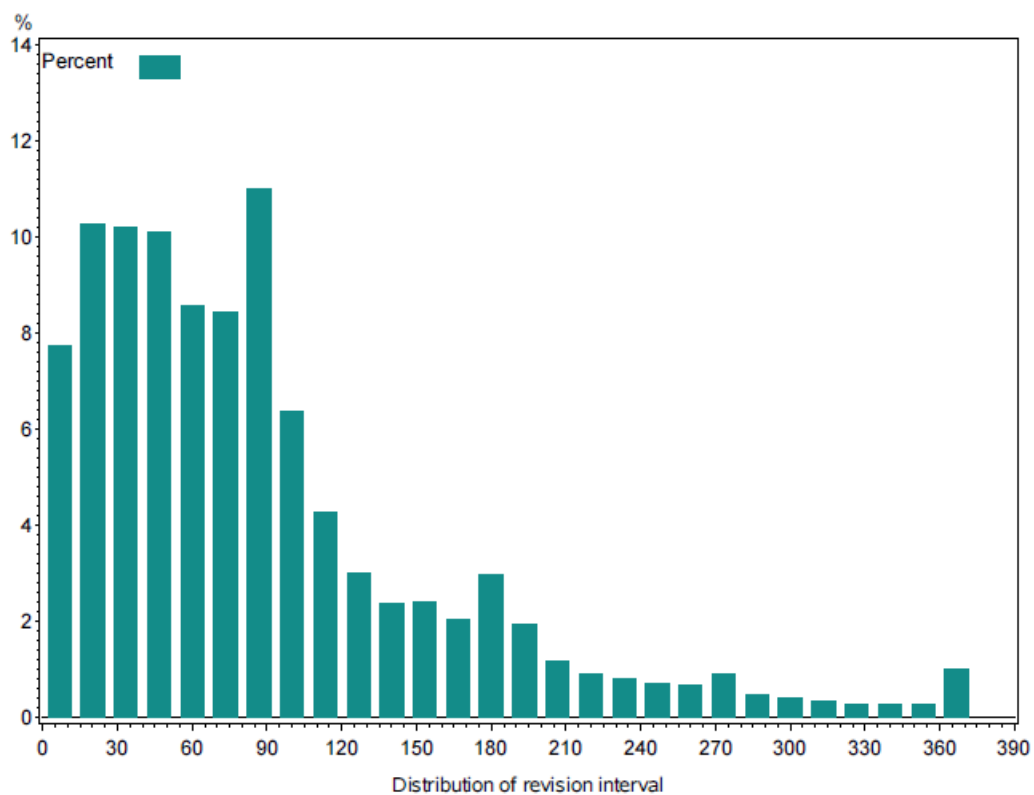


Figure 1: This figure shows the percentage histogram of revision interval of target prices of the full sample.

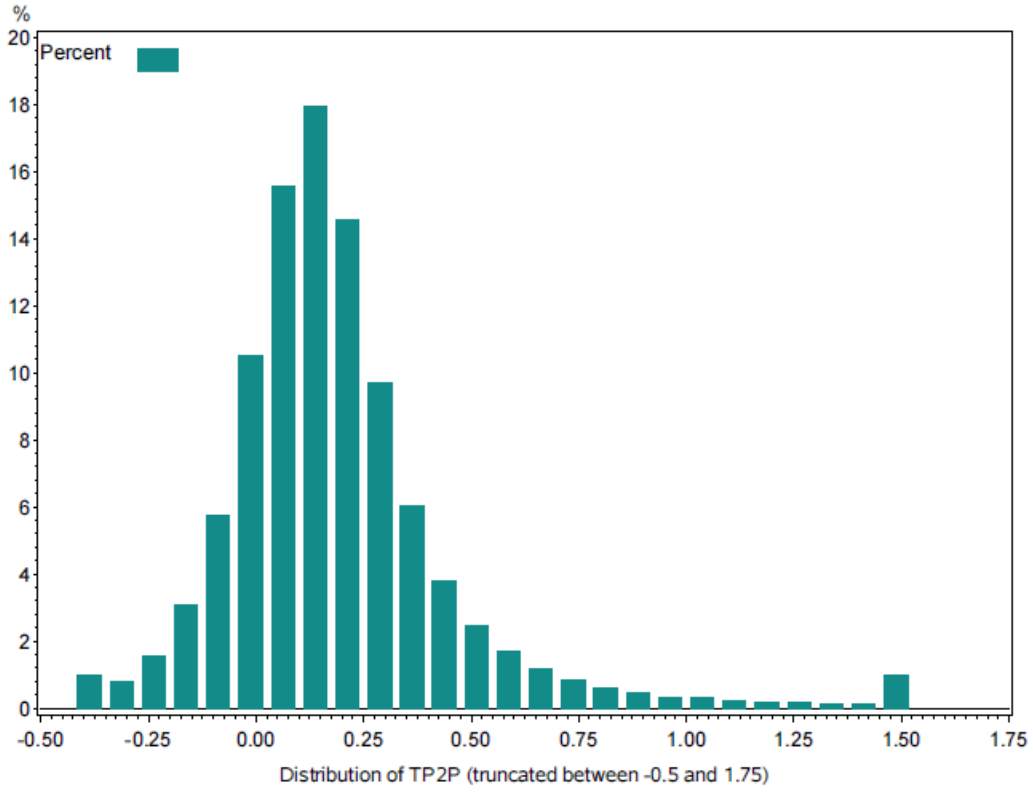


Figure 2: This figure shows the percentage histogram of $TP2P$.

Table I Variable Definitions

This table describes variables used in the analyses. We obtain analyst related data from the I/B/E/S, and financial and stock trading data from Compustat, unless specified otherwise. We winsorize continuous variables at the 1 and 99 percentiles over the full sample.

<i>Variable</i>	Definition and data source
Dependent variables	
<i>Ex ante optimism measures</i>	
<i>TP2P</i>	The implied return of target price relative to current price, computed as $(TP/P - 1)$
<i>TP2PRank</i>	The rank of TP2P, coded from 0 to 99, within its 2-digit SIC code industry in any given year
<i>TP2PAdj</i>	The implied return of target price adjusted for the average return for the portfolio of firms from the same country and Fama-French 17 industry
<i>Ex post optimism measures</i>	
<i>Ratio6</i>	The percentage of trading days in the next six months that stock prices are less than TP
<i>TPNOTMET</i>	Dummy equal to one if the maximum stock price over the next six months is smaller than TP
Control variables	
<i>logmv</i>	The logarithm of market cap as the product between the stock price and shares outstanding.
<i>mb</i>	The market to book ratio of a firm
<i>rev_growth</i>	The annual growth of total revenues over the past 5 years.
<i>intangible</i>	The ratio of intangible asset to current asset
<i>nanalyst</i>	The logarithm of the number of analyst following the firm in the previous year
<i>turnover12</i>	Average stock turnover of a firm in the past 12 months
<i>retstd12</i>	Standard deviation of daily stock return for a firm in the past 12 months
$\Delta TP2TP$	Target price revision computed as $(TP - TP_{-1})/TP_{-1}$, where TP_{-1} is the previous TP issued by the same analyst
<i>return_rev</i>	Cumulative stock return during the target-price revision period.
<i>optimism_eps</i>	Earnings forecast optimism computed as $100 \times (\text{EPS Forecast} - \text{Actual EPS}) / \text{Stock Price}$. We obtain the nearest annual earnings forecast by the same analyst for the same firm within one year of the target price issuance date
<i>ACWI12</i>	The previous 12-month cumulative ACWI World-Index Return from Morgan Stanley Inc.
<i>firmex</i>	Time interval in years since an analyst provides the first forecast for the target firm.
<i>genex</i>	Time interval in years since an analyst first forecast in the I/B/E/S detail files for any firm
<i>nticker</i>	Number of firms that analyst <i>a</i> covers in the year prior to firm <i>f</i> 's IPO date. We use I/B/E/S detail files. We use the natural log form of this variable in our multivariate regressions.
<i>brsize</i>	Brokerage size, defined as the logarithm of the number of analysts working for the I/B/E/S brokerage that an analyst is associated with in a year.
<i>crisis</i>	Dummy variable that equals one for the recent financial crisis during Dec. 2007 to July 2009 based on NBER.
Analyst traits	
<i>pureBroker</i>	A dummy variable that equals one if the brokerage house that employs an analyst is a pure broker that has no investment banking business, and zero otherwise. The data source is the Nelson's Directory of Investment Research during 1998 to 2008.
<i>underwriter</i>	A dummy variable that equals one if an analyst's employer served as either lead underwriter or co-manager for the covered firm in the past three years based on equity and debt offering from Thomson One Banker, and zero otherwise.
<i>local</i>	A dummy variable that equals one if an analyst resides in the same country as the target firm's headquarter country, and zero otherwise. Analyst locations are from the Nelson's Directory of Investment Research, while country locations for firm headquarters are from Compustat.

<i>purelocal</i>	A dummy variable that equals one if a local analyst works for a local broker. Analyst and brokerage location data are from annual volumes of the Nelson's Directory of Investment Research.
<i>foreign-local</i>	A dummy variable that equals one if a local works for a foreign broker. Analyst and brokerage location data are from annual volumes of the Nelson's Directory of Investment Research.
Firm traits related to external financing and earnings management	
$\Delta XFIN$	Financing variable of Bradshaw, Richardson, and Sloan (2006). The measure is equal to change in equity plus change in debt.
$\Delta EQUITY$	Change in equity following Bradshaw, Richardson and Sloan (2006). It is computed as sale of common and preferred stock minus purchase of common and preferred stock minus cash dividends paid, scaled by total assets.
<i>earnmgmt_firm</i>	Firm-level earnings management level, measured by the absolute value of discretionary accruals from the Modified Jones Model.
Country characteristics	
<i>commonlaw</i>	A dummy variable equal to one if the legal origin of a country is common law, and zero otherwise. The raw data are from La Porta et al. (1998).
<i>judicial</i>	Assessment of the "efficiency and integrity of the legal environment as it affects business, particularly foreign firms" produced by the country-risk rating agency <i>Business International Corporation</i> . The data are from La Porta et al. (1998).
<i>legsys</i>	Overall score of legal system & property rights. The data are from the Economic Freedom Dataset by Fraser Institute.
<i>rule</i>	Assessment of the law and order tradition in the country produced by the country-risk rating agency <i>International Country Risk</i> (ICR). The data are from La Porta et al. (1998).
<i>judimp</i>	Impartial courts. The data are from the Economic Freedom Dataset by Fraser Institute.
<i>judindp</i>	Judicial independence. The data are from the Economic Freedom Dataset by Fraser Institute.
<i>anti-corruption</i>	ICR's assessment of the corruption in government. A higher value indicates less corruption. The data are from La Porta et al. (1998).
<i>propprot</i>	Protection of property rights. The data are from the Economic Freedom Dataset by Fraser Institute.
<i>anti_dealing</i>	Average of ex ante and ex post private control of self-dealing from Djankov, La Porta, Lopez-de-Silanes, and Shleifer (2008).
<i>disclosure</i>	Index of accounting disclosure for a country. The data are from Bushman, Piotroski, and Smith (2004).
<i>earnmgmt</i>	Index of country-level earnings management from Leuz, Nanda, and Wysocki (2003). A larger value indicates a higher degree of earnings management.
<i>GDPP</i>	GDP per capita from World Development Indicator.
<i>developed</i>	Dummy variable equal to one if country <i>i</i> is a developed country, and zero otherwise. The data are from Standard and Poor's Global Stock Markets Factbooks 2004.
<i>usholdgdp</i>	U.S. investors' overseas holding of equity in a country scaled by local market GDP. The data source is US security holding data from the U.S. Treasury Department.
<i>idv</i>	Hofstede's (2001) cultural index on Individualism for a country.

Table II Summary Statistics and Correlations of Target Price Optimism

This table provides summary statistics and correlations of the optimism measures in our final sample. Table I lists the definitions of the optimism measures.

Panel A: Summary Statistics

	N	Mean	Std	Min	Median	Max
<i>Ex ante optimism measures</i>						
<i>TP2P</i>	1,129,974	0.19	0.27	-0.36	0.15	1.52
<i>TP2PRank</i>	1,129,974	49.44	28.71	0	49	99
<i>TP2PAAdj</i>	1,037,878	0.15	0.36	-0.58	0.09	1.52
<i>Ex post optimism measures</i>						
<i>Ratio6</i>	1,129,968	0.72	0.36	0	0.95	1
<i>TPNOTMET</i>	1,129,968	0.43	0.50	0	0	1

Panel B: Correlation Matrix

	<i>TP2P</i>	<i>TP2PRank</i>	<i>TP2PAAdj</i>	<i>Ratio6</i>	<i>TPNOTMET</i>
<i>Ex ante optimism measures</i>					
<i>TP2P</i>	1				
<i>TP2PRank</i>	0.83	1			
<i>TP2PAAdj</i>	0.81	0.64	1		
<i>Ex post optimism measures</i>					
<i>Ratio6</i>	0.49	0.56	0.38	1	
<i>TPNOTMET</i>	0.45	0.49	0.36	0.68	1

Table III Final Sample by Country and Year

This table provides the means of key variables of our final sample by country in Panel A and by year in Panel B. In Panel A, The firm number refers to the number of firms headquartered in a given country, and the analyst number refers to the number of analysts domiciled in a given country. An analyst would be double counted if she has moved across the border during our sample period. In Panel B, country number refers to the number of countries that the analysts are domiciled. For the definitions of all other variables, please refer to Table I.

Panel A: Sample distribution by country

Country	Firm	Analyst	<i>TP2P</i>	<i>TP2P</i> Rank	<i>TP2P</i> Adj	<i>Ratio6</i>	<i>TPNOTMET</i>
Argentina	41	10	0.31	59.6	0.18	0.74	0.47
Australia	743	387	0.14	41.5	0.12	0.68	0.38
Austria	60	6	0.23	56.0	0.22	0.81	0.49
Belgium	103	51	0.18	50.6	0.17	0.74	0.48
Brazil	221	74	0.33	61.3	0.26	0.78	0.55
Canada	1,304	777	0.24	52.1	0.23	0.75	0.44
Chile	38	24	0.22	54.2	0.13	0.72	0.41
China	670	125	0.14	46.7	0.08	0.62	0.30
Denmark	95	61	0.16	45.9	0.15	0.70	0.43
Egypt	21	17	0.24	55.0	0.27	0.80	0.55
England	1,382	2,013	0.15	45.4	0.13	0.68	0.39
Finland	104	50	0.12	41.1	0.10	0.68	0.38
France	460	450	0.15	45.5	0.14	0.69	0.42
Germany	451	360	0.15	44.6	0.14	0.67	0.38
Greece	102	37	0.25	58.4	0.29	0.78	0.54
Hong Kong	506	357	0.16	49.2	0.10	0.66	0.36
Hungary	15	6	0.13	41.6	0.10	0.71	0.42
India	416	289	0.15	45.1	0.07	0.67	0.39
Indonesia	103	71	0.15	50.0	0.05	0.63	0.35
Ireland	89	21	0.22	52.8	0.19	0.73	0.43
Israel	90	13	0.16	49.7	0.08	0.73	0.43
Italy	240	135	0.18	49.4	0.23	0.76	0.53
Japan	1,181	516	0.15	45.7	0.16	0.72	0.46
Korea	564	620	0.27	62.5	0.18	0.77	0.50
Malaysia	366	146	0.16	48.3	0.13	0.70	0.47
Mexico	92	28	0.22	55.8	0.13	0.74	0.50
Netherlands	194	139	0.15	46.4	0.12	0.69	0.41
New Zealand	82	34	0.11	42.5	0.06	0.66	0.38
Norway	190	130	0.28	51.6	0.27	0.76	0.53
Pakistan	14	7	0.28	63.2	0.21	0.90	0.73
Peru	19	4	0.17	47.0	0.01	0.60	0.22
Philippines	59	26	0.17	53.4	0.11	0.69	0.41
Poland	59	7	0.10	42.0	0.08	0.62	0.34
Portugal	31	26	0.28	60.0	0.29	0.79	0.58
Russia	132	38	0.42	64.5	0.31	0.71	0.43
Singapore	336	290	0.17	49.2	0.13	0.69	0.43
South Africa	153	104	0.15	45.0	0.08	0.68	0.36

Spain	137	136	0.18	50.5	0.16	0.72	0.48
Sweden	215	180	0.13	42.7	0.09	0.67	0.37
Switzerland	228	104	0.20	48.4	0.19	0.73	0.47
Taiwan	339	252	0.15	46.3	0.14	0.69	0.41
Thailand	266	138	0.18	52.6	0.12	0.71	0.45
Turkey	96	35	0.30	63.4	0.24	0.75	0.49
USA	5,304	4,214	0.20	51.0	0.14	0.73	0.45
Mean	393	284	0.20	50.6	0.15	0.72	0.44

Panel B: Sample distribution by year

Year	Obs.	Analyst	Firm	Country	<i>TP2P</i>	<i>TP2P-Rank</i>	<i>TP2P-Adj</i>	<i>Ratio6</i>	<i>TPNOT-MET</i>
2002	41,486	3,216	4175	23	0.27	49.6	0.33	0.85	0.61
2003	65,811	3,976	5950	38	0.16	49.6	0.01	0.58	0.26
2004	85,570	5,149	7378	40	0.15	49.3	0.05	0.70	0.41
2005	98,323	5,606	8349	43	0.14	49.6	0.03	0.64	0.33
2006	114,651	6,103	9229	44	0.15	49.4	0.05	0.69	0.38
2007	125,650	6,200	9886	44	0.15	49.4	0.00	0.75	0.46
2008	156,063	6,043	9969	44	0.28	49.3	0.45	0.85	0.59
2009	151,290	5,589	9358	44	0.18	49.3	0.14	0.56	0.27
2010	143,201	5,536	9341	44	0.18	49.5	0.11	0.73	0.43
2011	147,929	5,369	9479	44	0.21	49.5	0.19	0.81	0.56
Mean	112,997	5,279	8311	41	0.19	49.5	0.14	0.72	0.43

Table IV Univariate Comparison of Target Price Optimism

This table presents univariate comparisons of target price forecast optimism. For each trait in the first column, we show the mean differences and their *t*-statistics in various optimism measures between the high and low groups based on the partition of the trait. The non-country variables (analyst and firm traits) are ordered every year for every analyst country. The country variables (other than binary variables) are ordered every year for the cross-section of sample countries, with one observation for a country every year. A value greater (smaller) than the median based on the above ordering is treated as high (low). The *t*-statistics for the differences are two-way adjusted at firm and year levels. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively.

	Predicted Sign	Ex ante measures			Ex post measures	
		<i>TP2P</i>	<i>TP2P</i> Rank	<i>TP2P</i> Adj	<i>Ratio6</i>	<i>TPNOTMET</i>
Analyst/firm traits						
<i>purebroker</i>	+/?	-0.010 (-1.17)	0.955* (1.95)	-0.021 (-1.13)	-0.008 (-0.56)	-0.000 (-0.01)
<i>underwriter</i>	+/?	0.013** (2.13)	2.009*** (4.75)	0.004* (1.86)	0.016 (1.14)	0.003 (0.18)
<i>local</i>	+/?	0.016** (2.57)	2.672*** (4.99)	0.010 (0.65)	0.033*** (2.97)	0.036*** (2.93)
$\Delta XFIN$	+	0.055*** (9.11)	4.198*** (13.47)	0.055*** (9.20)	0.023*** (4.19)	0.030*** (3.84)
$\Delta EQUITY$	+	0.067*** (11.10)	5.202*** (17.21)	0.072*** (8.22)	0.025*** (5.59)	0.033*** (5.75)
<i>earnmgmt_firm</i>	+	0.026*** (6.46)	1.467*** (6.07)	0.020*** (4.03)	-0.001 (-0.25)	0.001 (0.14)
Investor protection variables						
<i>commonlaw</i>	-	-0.001 (-0.14)	-0.892* (-1.76)	-0.029* (-1.69)	-0.000 (-0.00)	-0.045** (-1.98)
<i>judicial</i>	-	-0.016* (-1.81)	-3.793*** (-5.27)	-0.012 (-0.59)	-0.007 (-0.63)	-0.025* (-1.86)
<i>legsys</i>	-	-0.025*** (-2.81)	-4.658*** (-5.05)	-0.036*** (-2.79)	-0.014* (-1.79)	-0.038** (-2.12)
<i>rule</i>	-	-0.026*** (-3.35)	-5.651*** (-6.92)	-0.002 (-1.79)*	-0.000 (-0.00)	-0.029* (-1.78)
<i>judimp</i>	-	-0.035*** (-4.34)	-6.078*** (-8.60)	-0.064** (-1.96)	-0.015* (-1.78)	-0.040*** (-2.82)
<i>judindp</i>	-	-0.015 (-1.36)	-5.014*** (-7.51)	-0.005 (-0.25)	-0.010 (-0.86)	-0.027* (-1.83)
<i>anti-corruption</i>	-	-0.022** (-2.29)	-5.082*** (-5.47)	-0.032** (-2.54)	-0.018* (-1.73)	-0.036*** (-2.76)
<i>propprot</i>	-	-0.034*** (-3.85)	-5.790*** (-6.57)	-0.029 (-1.38)	-0.012 (-1.02)	-0.037** (-2.27)
<i>anti_dealing</i>	-	-0.027** (-2.04)	-1.764*** (-2.93)	-0.059** (-2.10)	-0.042** (-1.91)	-0.047* (-1.78)

Financial transparency variables

<i>disclosure</i>	–	-0.002 (-0.25)	-2.116*** (-3.47)	-0.028** (-1.99)	-0.012* (-1.85)	-0.025** (-1.98)
<i>earnmgmt</i>	+	-0.006 (-0.75)	1.065* (1.69)	0.011 (0.79)	-0.004 (-0.31)	0.017 (1.23)
<i>Economic development and culture variables</i>						
<i>gdpp</i>	–	-0.031*** (-3.72)	-5.954*** (-6.94)	0.002 (0.10)	-0.005 (-0.44)	-0.022* (-1.65)
<i>developed</i>	–	-0.027*** (-2.59)	-5.406*** (-5.05)	0.002 (0.08)	-0.004 (-0.30)	-0.019 (-1.34)
<i>usholdgdp</i>	–	-0.008 (-0.93)	-2.210*** (-4.47)	0.001 (0.04)	-0.023* (-1.66)	-0.028 (-1.44)
<i>idv</i>	–	-0.006 (-0.72)	-3.008*** (-3.81)	-0.015* (-1.91)	0.001 (0.06)	-0.021* (-1.77)

Table V. The Determinants of Analyst Target Price Optimism

This table reports results of pooled regressions estimating the determinants of target price optimism for our full sample. All models are estimated using OLS regression except for Column (5) in which we use logistic regression. Panel A shows the benchmark regression specifications, while Panel B shows the incremental effect of analyst, firm, or analyst-country traits. In Panel B, each cell represents a separate regression, where the trait in the first column is added to the corresponding benchmark regression in Panel A. For brevity, we only report the results for the individual traits. We define the variables in Table I. All of the models include year, month, and industry indicators. We report *t*-statistics adjusted for two-way clustering at both firm and year levels in parentheses. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively.

Panel A: Benchmark Regressions

	Ex ante measures			Ex post measures	
	(1)	(2)	(3)	(4)	(5)
	<i>TP2P</i>	<i>TP2P</i> <i>Rank</i>	<i>TP2P</i> <i>Adj</i>	<i>Ratio</i> <i>6</i>	<i>TP</i> <i>NOT</i> <i>MET</i>
<i>logmv</i>	-0.012*** (-5.55)	-0.813*** (-4.67)	-0.014*** (-5.34)	0.009*** (3.30)	0.054*** (3.31)
<i>mb</i>	-0.002*** (-2.92)	-0.331*** (-4.72)	-0.002* (-1.92)	-0.001 (-1.02)	-0.010* (-1.67)
<i>rev_growth</i>	0.076*** (5.81)	6.279*** (17.67)	0.067*** (5.10)	0.041*** (7.29)	0.258*** (5.59)
<i>intangible</i>	-0.016* (-1.65)	-0.457 (-0.49)	-0.010 (-0.66)	0.048*** (4.42)	0.133** (2.12)
<i>nanalyst</i>	-0.012*** (-3.02)	-0.667 (-1.40)	-0.011 (-1.64)	-0.014* (-1.76)	-0.098*** (-3.15)
<i>turnoverpre12</i>	0.010*** (3.15)	1.030*** (3.93)	0.002 (0.43)	-0.002 (-0.41)	-0.033 (-0.93)
<i>retstd12</i>	0.409*** (4.97)	10.152 (1.12)	0.447*** (3.81)	-0.186 (-1.37)	-0.889 (-1.16)
<i>deltatp2tp</i>	0.471*** (7.02)	52.768*** (8.27)	0.313*** (3.77)	0.288*** (7.92)	1.661*** (5.51)
<i>return_rev</i>	-0.498*** (-7.85)	-50.075*** (-9.82)	-0.556*** (-15.77)	-0.355*** (-11.50)	-2.208*** (-10.61)
<i>optimism_eps</i>	0.000*** (6.04)	0.023*** (5.51)	0.000*** (5.77)	0.001*** (7.24)	0.005*** (6.01)
<i>firmex</i>	-0.001** (-2.07)	-0.035 (-1.00)	-0.000 (-0.24)	0.001* (1.89)	0.005*** (3.14)
<i>genex</i>	0.002*** (4.24)	0.175*** (5.85)	0.001*** (3.06)	0.001** (2.14)	0.002 (1.14)
<i>nticker</i>	-0.005 (-1.14)	-0.525 (-0.96)	-0.008 (-1.49)	0.006 (1.08)	0.003 (0.08)
<i>brsize</i>	-0.018*** (-8.42)	-2.119*** (-12.69)	-0.015*** (-8.10)	-0.019*** (-6.54)	-0.112*** (-9.01)
<i>acwi12</i>	-0.150*** (-5.24)	-11.915*** (-4.81)	-0.690*** (-6.21)	0.186*** (4.20)	0.972*** (4.50)

<i>Constant</i>	0.416*** (13.79)	60.224*** (24.38)	0.370*** (6.07)	0.877*** (24.22)	0.686*** (5.10)
Observations	1,129,974	1,129,974	1,037,878	1,129,968	1,129,968
(Pseudo) R-squared	0.175	0.118	0.356	0.115	0.070

Panel B: Mitigating Effects of Analyst Traits, Firm Traits, and Country Characteristics

	Ex ante measures		Ex post measures		
	(1)	(2)	(3)	(4)	(5)
	<i>TP2P</i>	<i>TP2P</i> <i>Rank</i>	<i>TP2P</i> <i>Adj</i>	<i>Ratio6</i>	<i>TPNOTMET</i>
Analyst traits					
<i>purebroker</i>	-0.001 (-0.17)	0.689* (1.74)	-0.000 (-0.01)	0.003 (0.57)	0.054** (2.11)
<i>underwriter</i>	0.026*** (8.28)	3.117*** (10.58)	0.025*** (6.09)	0.030*** (7.19)	0.109*** (5.40)
<i>local</i>	-0.008 (-1.55)	0.522 (1.16)	-0.007 (-0.80)	0.025*** (4.29)	0.121*** (4.98)
<i>purelocal</i>	0.017*** (3.83)	2.969*** (6.03)	0.009 (1.13)	0.036*** (5.13)	0.157*** (6.61)
<i>foreign-local</i>	-0.033*** (-8.40)	-3.605*** (-9.79)	-0.020*** (-3.16)	-0.023*** (-3.73)	-0.089*** (-3.11)
Firm traits					
$\Delta XFIN$	0.206*** (10.59)	17.705*** (13.55)	0.177*** (7.69)	0.146*** (6.34)	0.819*** (6.32)
$\Delta EQUITY$	0.267*** (9.34)	22.648*** (10.20)	0.237*** (7.22)	0.183*** (5.49)	1.059*** (5.65)
<i>earnmgmt_firm</i>	0.140*** (6.37)	8.312*** (4.71)	0.109*** (5.49)	0.025 (1.30)	0.247** (2.31)
Investor protection variables					
<i>commonlaw</i>	-0.005 (-1.18)	-0.851* (-1.76)	-0.024*** (-2.82)	-0.004 (-0.42)	-0.099* (-1.79)
<i>judicial</i>	-0.008*** (-4.98)	-1.232*** (-8.76)	-0.006** (-2.06)	-0.008*** (-3.08)	-0.054*** (-4.34)
<i>legsys</i>	-0.013*** (-4.53)	-2.454*** (-8.79)	-0.009* (-1.66)	-0.013*** (-2.89)	-0.096*** (-3.65)
<i>rule</i>	-0.006*** (-2.77)	-1.069*** (-5.09)	-0.003 (-0.91)	-0.004* (-1.88)	-0.042*** (-3.24)
<i>judimp</i>	-0.014*** (-8.10)	-2.304*** (-13.59)	-0.013*** (-4.11)	-0.016*** (-4.52)	-0.088*** (-5.30)
<i>judindp</i>	-0.011*** (-6.29)	-1.834*** (-9.63)	-0.008** (-2.57)	-0.010*** (-3.41)	-0.067*** (-4.23)
<i>anti-corruption</i>	-0.007***	-1.406***	-0.004	-0.007**	-0.063***

	(-2.64)	(-6.04)	(-0.88)	(-2.19)	(-3.34)
<i>propprot</i>	-0.010***	-1.789***	-0.007*	-0.009**	-0.048***
	(-3.81)	(-6.33)	(-1.75)	(-2.49)	(-2.63)
<i>anti_dealing</i>	-0.034***	-3.768***	-0.044***	-0.032*	-0.220*
	(-3.70)	(-4.06)	(-2.72)	(-1.74)	(-1.92)
<i>Financial transparency variables</i>					
<i>disclosure</i>	-0.002***	-0.239***	-0.001**	-0.002***	-0.011***
	(-3.53)	(-5.64)	(-2.26)	(-2.99)	(-4.39)
<i>earnmgmt</i>	-0.000	0.067**	0.001*	0.001*	0.008***
	(-0.03)	(2.16)	(1.76)	(1.66)	(2.85)
<i>Economic development and culture variables</i>					
<i>gdpp</i>	0.002	-0.147	0.009	0.005	0.009
	(0.65)	(-0.43)	(1.47)	(1.22)	(0.42)
<i>developed</i>	-0.028***	-4.992***	-0.004	-0.024*	-0.187***
	(-2.72)	(-4.84)	(-0.21)	(-1.78)	(-2.59)
<i>usholdgdp</i>	-0.026*	-7.033***	-0.004	-0.042**	-0.344**
	(-1.94)	(-4.64)	(-0.21)	(-2.06)	(-2.53)
<i>idv</i>	-0.000	-0.050***	-0.000	-0.000*	-0.003***
	(-1.38)	(-4.12)	(-0.90)	(-1.75)	(-3.57)

Table VI The Determinants of Analyst Target Price Optimism: Alternative samples

Panel A shows the mediating effects for the firms covered by both local and foreign analysts. The sample is reduced by half from 1,069,879 observations in the full sample to 554,247 observations. Panel B reports the regression results for the Firm-Analyst-Year sample in which all observations are averaged per analyst-firm-year. Panel C shows the mitigating effects for the recent financial crisis period (Dec. 2007 to June 2009 in the first two columns) and the non-crisis period (the last two columns). The first column lists the analyst, firm, or analyst-country traits. Each cell represents a regression, in which each of the traits in the first column is added to the corresponding benchmark regression in Panel A of Table V. For brevity we do not report the results for control variables. The *t*-statistics are two-way adjusted at firm and year levels. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively.

	Panel A. Both local & foreign analysts		Panel B. Firm-Analyst-Year		Panel C. Non-Crisis Periods versus Crisis Periods			
	TP2P	Ratio6	TP2P	Ratio6	Non-crisis		Crisis	
					TP2P	Ratio6	TP2P	Ratio6
Analyst traits								
<i>purebroker</i>	-0.004 (-0.94)	0.000 (0.01)	-0.003 (-1.31)	-0.000 (-0.02)	0.003 (0.93)	0.005 (0.79)	-0.016*** (-4.98)	-0.008 (-0.84)
<i>underwriter</i>	0.021*** (5.44)	0.028*** (6.94)	0.033*** (10.30)	0.036*** (8.84)	0.023*** (7.72)	0.031*** (6.22)	0.040*** (8.14)	0.025*** (4.89)
<i>local</i>	0.010** (2.47)	0.030*** (5.07)	-0.008** (-2.23)	0.028*** (5.15)	-0.004 (-0.80)	0.029*** (4.51)	-0.022*** (-3.62)	0.012 (1.17)
<i>purelocal</i>	0.018*** (4.99)	0.035*** (6.49)	0.017*** (3.87)	0.042*** (6.19)	0.018*** (3.48)	0.039*** (5.26)	0.010 (1.08)	0.025 (1.51)
<i>foreign-local</i>	-0.014*** (-3.26)	-0.010** (-1.98)	-0.033*** (-7.07)	-0.028*** (-4.29)	-0.030*** (-8.07)	-0.023*** (-3.28)	-0.039*** (-5.42)	-0.020* (-1.82)
Firm traits								
$\Delta XFIN$	0.200*** (8.60)	0.154*** (5.56)	0.225*** (10.88)	0.138*** (6.90)	0.189*** (9.03)	0.164*** (8.50)	0.247*** (6.29)	0.082*** (2.64)
$\Delta EQUITY$	0.251*** (6.97)	0.191*** (4.64)	0.291*** (9.99)	0.170*** (5.87)	0.256*** (7.38)	0.209*** (6.61)	0.293*** (6.53)	0.099** (2.14)
<i>earnmgmt_firm</i>	0.118*** (4.23)	-0.000 (-0.00)	0.165*** (5.29)	0.022 (1.40)	0.117*** (5.76)	0.022 (0.88)	0.196*** (11.00)	0.038** (2.47)
Investor protection and enforcement								
<i>commonlaw</i>	-0.008** (-2.32)	-0.001 (-0.09)	0.005 (1.24)	0.004 (0.50)	-0.006 (-1.56)	-0.004 (-0.35)	0.001 (0.10)	-0.001 (-0.32)

<i>judicial</i>	-0.008*** (-5.47)	-0.008*** (-3.51)	-0.007*** (-5.24)	-0.006*** (-3.07)	-0.009*** (-4.62)	-0.008*** (-2.66)	-0.007*** (-3.49)	-0.005*** (-9.83)
<i>legsys</i>	-0.013*** (-5.66)	-0.013*** (-3.47)	-0.014*** (-5.86)	-0.014*** (-3.56)	-0.014*** (-4.10)	-0.016*** (-2.82)	-0.011*** (-3.83)	-0.002 (-0.27)
<i>rule</i>	-0.006*** (-3.29)	-0.004** (-2.24)	-0.005*** (-2.68)	-0.003 (-1.56)	-0.007*** (-3.26)	-0.005* (-1.84)	-0.002 (-0.63)	0.000 (0.05)
<i>judimp</i>	-0.014*** (-8.73)	-0.015*** (-4.85)	-0.015*** (-7.85)	-0.016*** (-4.91)	-0.015*** (-7.13)	-0.018*** (-4.15)	-0.015*** (-8.25)	-0.008*** (-5.26)
<i>judindp</i>	-0.009*** (-7.31)	-0.009*** (-4.00)	-0.011*** (-7.66)	-0.011*** (-4.08)	-0.011*** (-5.37)	-0.012*** (-2.95)	-0.010*** (-6.05)	-0.004** (-2.48)
<i>anti-corruption</i>	-0.007*** (-3.10)	-0.007** (-2.31)	-0.007*** (-3.63)	-0.008*** (-2.97)	-0.008*** (-3.04)	-0.009** (-2.16)	-0.002 (-0.46)	0.000 (0.09)
<i>propprot</i>	-0.012*** (-5.86)	-0.012*** (-3.46)	-0.010*** (-3.78)	-0.009*** (-2.70)	-0.009*** (-3.26)	-0.010** (-2.10)	-0.016*** (-8.53)	-0.006*** (-4.80)
<i>anti_dealing</i>	-0.030*** (-3.81)	-0.025 (-1.63)	-0.021** (-2.36)	-0.026* (-1.68)	-0.028*** (-2.88)	-0.027 (-1.14)	-0.047*** (-6.02)	-0.041*** (-8.35)
Financial transparency								
<i>disclosure</i>	-0.001*** (-4.31)	-0.002*** (-3.37)	-0.002*** (-3.56)	-0.002*** (-3.17)	-0.002*** (-3.09)	-0.002*** (-3.10)	-0.001*** (-3.28)	-0.000 (-0.29)
<i>earnmgmt</i>	-0.000 (-0.68)	0.000 (0.29)	-0.000 (-0.77)	0.000 (0.25)	0.000 (0.75)	0.001 (0.98)	-0.001 (-0.72)	-0.000 (-0.27)
Economic development and culture								
<i>gdpp</i>	-0.001 (-0.24)	0.002 (0.57)	0.004 (1.61)	0.008** (2.57)	0.001 (0.31)	0.004 (1.00)	0.003 (0.64)	0.009 (0.72)
<i>developed</i>	-0.027*** (-3.21)	-0.025* (-1.82)	-0.025*** (-3.22)	-0.022** (-2.09)	-0.033*** (-2.76)	-0.031* (-1.81)	-0.013 (-0.99)	0.004 (0.34)
<i>usholdgdp</i>	-0.022** (-2.40)	-0.025 (-1.41)	-0.041*** (-2.68)	-0.075*** (-3.33)	-0.027* (-1.82)	-0.054** (-2.21)	-0.009 (-0.89)	0.002 (0.10)
<i>idv</i>	-0.007 (-1.15)	-0.008 (-1.07)	-0.010 (-1.52)	-0.014* (-1.94)	-0.018*** (-2.73)	-0.022** (-2.20)	0.007 (0.44)	0.014 (0.78)

Table VII The Determinants of Analyst Target Price Optimism: The Principal Component Analysis

This table reports results of pooling regressions on the determinants of target price optimism (either *TP2P* or *Ratio6*) for our full sample. *analysttraits* = the first principal component of analyst trait variables of *purebroker*, *underwriter*, and *local*; *firmtraits* = the first principal component of firm trait variables of $\Delta XFIN$, $\Delta EQUITY$, and *earnmgmt_firm*; *ctryinfrp1* = the first principal component of all of the country characteristics of investor protection, financial transparency, and economic development and culture; *ctryinfrp2* = the second component of all of the country characteristics of investor protection, financial transparency, and economic development and culture. The signs of the input variables to these principal components are adjusted so that the principal components of analyst and firm traits have an unambiguously positive predicted sign, and the principal components of country characteristics have an unambiguously negative predicted sign. The *t*-statistics are two-way adjusted at firm and year levels. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively.

	<i>TP2P</i>					<i>Ratio6</i>				
<i>analysttraits</i>	0.006***				0.007***	0.007***				0.008***
	(3.72)				(3.85)	(3.32)				(3.83)
<i>firmtraits</i>		0.021***			0.020***		0.012***			0.011***
		(10.14)			(10.40)		(5.69)			(5.30)
<i>ctryinfrp1</i>			-0.005***		-0.007***			-0.008***		-0.009***
			(-3.50)		(-3.64)			(-3.53)		(-3.18)
<i>ctryinfrp2</i>				-0.002	0.000				-0.003	-0.001
				(-1.19)	(0.14)				(-1.07)	(-0.33)
<i>logmv</i>	-0.012***	-0.010***	-0.012***	-0.013***	-0.010***	0.009***	0.011***	0.011***	0.009***	0.012***
	(-5.58)	(-4.14)	(-5.01)	(-5.56)	(-3.82)	(3.17)	(3.81)	(4.16)	(3.25)	(4.43)
<i>mb</i>	-0.002***	-0.002***	-0.001*	-0.002***	-0.002**	-0.001	-0.001	-0.001	-0.001	-0.001
	(-3.10)	(-3.20)	(-1.89)	(-2.76)	(-2.08)	(-1.10)	(-1.14)	(-0.51)	(-1.13)	(-0.55)
<i>rev_growth</i>	0.074***	0.058***	0.076***	0.077***	0.059***	0.040***	0.028***	0.042***	0.043***	0.030***
	(5.75)	(5.37)	(5.79)	(5.85)	(5.14)	(6.87)	(5.12)	(7.88)	(8.11)	(5.32)
<i>intangible</i>	-0.017*	-0.012	-0.011	-0.019**	-0.007	0.046***	0.049***	0.055***	0.045***	0.057***
	(-1.81)	(-1.43)	(-1.25)	(-2.03)	(-0.83)	(4.30)	(4.22)	(4.14)	(4.12)	(4.36)
<i>nanalyst</i>	-0.011***	-0.015***	-0.015***	-0.011**	-0.017***	-0.013	-0.016**	-0.017**	-0.012	-0.018**
	(-2.65)	(-3.32)	(-3.86)	(-2.55)	(-3.88)	(-1.60)	(-1.99)	(-2.31)	(-1.47)	(-2.45)
<i>turnoverpre12</i>	0.010***	0.007**	0.010***	0.011***	0.007**	-0.002	-0.004	-0.002	-0.002	-0.006*
	(2.84)	(2.33)	(3.62)	(3.59)	(2.47)	(-0.60)	(-1.23)	(-0.67)	(-0.61)	(-1.67)
<i>retstd12</i>	0.419***	0.475***	0.402***	0.392***	0.481***	-0.176	-0.139	-0.196	-0.206	-0.131
	(5.04)	(4.96)	(4.79)	(4.49)	(4.66)	(-1.31)	(-1.04)	(-1.37)	(-1.37)	(-0.93)
<i>deltatp2tp</i>	0.471***	0.478***	0.472***	0.473***	0.479***	0.289***	0.283***	0.281***	0.283***	0.278***

	(7.10)	(7.12)	(7.06)	(7.06)	(7.23)	(8.03)	(7.73)	(7.71)	(7.73)	(7.65)
<i>return_rev</i>	-0.497***	-0.504***	-0.502***	-0.500***	-0.507***	-0.356***	-0.351***	-0.354***	-0.352***	-0.351***
	(-7.91)	(-7.93)	(-7.91)	(-7.86)	(-8.06)	(-11.73)	(-11.59)	(-11.33)	(-11.38)	(-11.78)
<i>optimism_eps</i>	0.000***	0.000***	0.000***	0.000***	0.000***	0.001***	0.001***	0.001***	0.001***	0.001***
	(6.17)	(4.85)	(5.76)	(5.90)	(4.60)	(7.19)	(7.47)	(7.48)	(7.10)	(7.50)
<i>firmex</i>	-0.001**	-0.000	-0.001*	-0.001*	-0.000	0.001*	0.001**	0.001*	0.001*	0.001***
	(-2.00)	(-0.67)	(-1.79)	(-1.72)	(-0.20)	(1.88)	(2.42)	(1.84)	(1.79)	(2.75)
<i>genex</i>	0.002***	0.002***	0.002***	0.002***	0.002***	0.001**	0.001*	0.001**	0.001**	0.001**
	(4.17)	(4.21)	(4.78)	(4.31)	(4.91)	(1.97)	(1.65)	(2.45)	(2.12)	(2.30)
<i>nticker</i>	-0.005	-0.004	-0.008	-0.007	-0.008	0.006	0.006	0.006	0.006	0.005
	(-1.18)	(-0.87)	(-1.58)	(-1.50)	(-1.43)	(0.98)	(1.20)	(0.99)	(1.16)	(0.92)
<i>brsize</i>	-0.019***	-0.019***	-0.017***	-0.018***	-0.019***	-0.020***	-0.021***	-0.020***	-0.021***	-0.021***
	(-8.20)	(-9.11)	(-8.20)	(-8.54)	(-8.58)	(-6.75)	(-6.67)	(-6.64)	(-5.98)	(-6.56)
<i>acwi12</i>	-0.150***	-0.156***	-0.154***	-0.153***	-0.159***	0.187***	0.173***	0.176***	0.178***	0.164***
	(-5.22)	(-5.13)	(-5.33)	(-5.37)	(-5.19)	(4.17)	(4.03)	(3.79)	(3.88)	(3.57)
Constant	0.415***	0.414***	0.434***	0.431***	0.433***	0.879***	0.877***	0.892***	0.888***	0.894***
	(13.93)	(13.84)	(14.04)	(13.77)	(14.05)	(24.76)	(24.43)	(24.29)	(24.06)	(24.77)
Observations	1,122,659	1,008,877	1,063,576	1,063,576	950,853	1,122,653	1,008,871	1,063,570	1,063,570	950,847
R-squared	0.175	0.184	0.180	0.179	0.188	0.115	0.113	0.116	0.115	0.114