Cultural Biases in Equity Analysis*

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Abstract

I study the role of cultural biases in decision-making among equity analysts. I construct a Eurobarometer-based measure of cultural trust bias between European countries and find that a more positive trust bias by the analyst's country of origin toward the firm's headquarter country is associated with significantly more positive stock recommendations, controlling for analyst-month and firm-month fixed effects. The cultural bias effect is stronger for eponymous firms whose names mention their home country, suggesting firm names can have a priming effect for cultural biases. A more positive trust bias toward the CEO's home country is also associated with more positive recommendations. The bias effect varies over time, increasing with the aggregate level of pessimism in Europe and decreasing with consumer confidence. In addition, I find evidence of a negative North-South bias emerging during the European debt crisis, a UK-Europe divergence amid Brexit, and a Franco-British bias during the Iraq war. The share price reaction to buy recommendations by more positively biased analysts is weaker, suggesting that the market may be aware of these biases.

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Keywords: cultural bias, trust, analyst recommendation, sentiment, European debt crisis, brexit

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1 Introduction

Are the Germans more trustworthy than the French? It turns out that the answer varies greatly depending on whom–or where–you ask. In this case, based on a Eurobarometer survey, the average European would have said yes. But the average Belgian, Greek, or Portuguese would have disagreed. Such cultural perceptions of the trustworthiness of people from other countries differ substantially by country. Hence, culture and cultural background can represent a source of bias in decision-making. Guiso, Sapienza, and Zingales (2009) show evidence that cultural biases affect the volume of trade and investment between countries. Bottazzi, Da Rin, and Hellmann (2016) find that higher level of bilateral trust between countries positively predicts venture capital firms' investment decisions, but that it is associated with worse performance of such investments.

In this paper, I study the role of cultural biases in analysts' stock recommendations in Europe. My analysis can be divided into four parts. First, I construct a Eurobarometer survey-based measure of trust bias as a proxy for persistent, long-held biases between different European nations and study their effect on analyst recommendations. Second, I explore the time variation in the effect of these biases depending on the general sentiment. Third, I study the immediate effect on stock recommendations of three sudden shocks to cultural perceptions: the European debt crisis, Brexit, and the Iraq war. Finally, I perform a number of additional analyses to explore the cross-sectional determinants of bias effects and the stock market reactions to biased analyst recommendations.

First, to quantify general cultural biases, I follow the methodology of Guiso et al. (2009) and Bottazzi et al. (2016) to construct a bilateral generalized trust measure between European countries based on Eurobarometer surveys. These surveys ask the citizens of different European nations how much they trust the citizens of each of the other nations included in the survey. This provides a unique measure of directional generalized trust between countries. It captures both the objective trustworthiness of individuals from different countries of origin, as well as cultural biases, reflected in the fact that different nationalities' relative trustworthiness is judged very differently by people depending on their own country of origin. Following the methodology of Guiso et al. (2009), I use regression analysis to separate the general tendency of different nationalities to be trusted by others, as well as to trust others. I then use the residuals as a proxy for *Trust bias* in my analysis.

I hypothesize that a more positive trust bias by the analyst's country of origin towards the country where the covered firm is located is associated with more favorable stock recommendations. To test this hypothesis, I construct a comprehensive sample of analyst recommendations at a monthly frequency for all publicly listed firms based in the 15 European

countries covered by the Eurobarometer trust surveys, by analysts from any of those same 15 countries.[1] My results support the hypothesis. A more positive trust bias by the analyst's country of origin toward the firm headquarter country is associated with significantly more positive stock recommendations. I include analyst-month fixed effects and firm-month fixed effects in my regression analysis, which means that these results are effectively *within analyst* and *within firm*. This means that my results are not driven by the underlying firm-specific factors or the general tendency of the analyst to assign more or less positive recommendations at that point in time, as both of these effects are captured by the fixed effects. The trust bias effect is economically significant. My estimates suggest that the difference in trust bias would result in a Norwegian analyst being 8.4 percentage points more likely to assign a buy rating to a Danish company than an Austrian analyst. Similarly, a Norwegian analyst would be an estimated 6.7 percentage points more likely to assign a buy-recommendation to a British company than a French analyst.

If analyst recommendations are affected by the analyst's cultural biases, making the firm's home country more salient might activate the analyst's cultural biases without the analyst being aware of it, a phenomenon referred to as priming in the experimental psychology literature (see, e.g., Bargh and Chartrand, 2000). Priming has been used extensively in experimental economics in recent years to help identify the causal impact of identity and norms on behavior.[2] To study whether firm names might cause a priming effect on cultural biases, I define firms as *Eponymous* if the firm name includes the name of its home country. Examples of such eponymous firms include Deutsche Bank, Hellenic Telecommunications Organisation, Telecom Italia, and Bolsas y Mercados Espanoles.[3] I find that the effect of trust bias on stock recommendations is significantly larger for eponymous firms. This suggests that firm names can have a priming effect reinforcing the existing cultural biases and supports a causal interpretation of the effect of cultural biases.

The analysis in this paper generally explores the cultural biases among the analyst home country's citizens toward the firm headquarter country. However, the cultural biases toward the firm's management might have a similar effect. I hence extend the analysis to include the trust bias by analyst home country toward the CEO home country for a subsample where I can determine the CEO nationalities. I find that a more positive trust bias toward

[1] I estimate each analyst's country of origin based on the surname, using data from Forebears.io, a genealogical online directory of sources for family history research.

[2] For example, Cohn, Fehr, and Maréchal (2014) find that bank employees behave more dishonestly when their professional identity as bank employees is rendered salient. Callen, Isaqzadeh, Long, and Sprenger (2014) find that asking subjects to recollect fearful experiences reduces risk appetite. Cohn, Engelmann, Fehr, and Maréchal (2015) show that financial professionals primed with a financial bust are more fearful and risk averse than those primed with a boom.

[3] Nearly seven percent of the monthly observations in my data are attributable to eponymous firms.

the CEO country is associated with significantly more positive stock recommendations, as is trust bias toward the firm country. The estimated coefficient for the trust bias toward CEO country is lower than that for the trust bias toward firm country, but statistically more significant. These results are also robust to including analyst-firm country pair fixed effects, which means that the variation in trust toward CEO country within analyst-firm country pairs alone is associated with statistically significant differences in stock recommendations.

The last Eurobarometer survey to include the bilateral trust question was in 1996, which is the first year in my sample. Hence, the measure of cultural bias that I use in my analysis does not change over time. This should not be very problematic, as cultural biases tend to be quite stable. Guiso et al. (2009) provide an extensive analysis of the determinants of cultural trust, and nearly all of the significant determinants are time-invariant.[4] On the other hand, while my measure of cultural bias is time-invariant, I can study the time variation in its effect. In particular, it seems intuitive that biases might have a stronger effect during bad times. This prediction would be consistent with the results of Fouka and Voth (2016), who show that the conflict between Greece and Germany during the sovereign debt crisis resulted in larger declines in the sales of German cars in areas where the Germans carried out massacres during the Second World War. On the other hand, Loh and Stulz (2018) find evidence of analysts working harder and the market participants also relying more on analyst recommendations during times of high uncertainty.

I use regression analysis to estimate monthly coefficients for the effect of trust bias on analyst recommendations and find significant time variation in the effect of cultural biases. Plotting the monthly coefficients over time against a Eurobarometer-based measure of general pessimism in Europe shows a clear positive relationship between the effect of biases and the level of pessimism.[5] Both the level of pessimism and the effect of cultural biases are highest during negative sentiment, notably during and around recessions. Similarly, there is a clear negative relationship between the effect of cultural biases and European consumer confidence.[6] A regression analysis shows that these relationships between the overall sentiment and the effect of cultural biases are both statistically and economically significant. Importantly, these time variation results are robust to including country-pair fixed effects

[4]The determinants of higher bilateral cultural trust include common language and common linguistic roots, religious similarity, genetic and somatic similarity, and similar legal origin. Geographic distance, history of wars, and differences in wealth level are associated with lower levels of bilateral trust. In their intrumental variables analysis, Guiso et al. (2009) use commonality of religion and somatic distance as instruments for bilateral trust. Both of these instruments are constant over time.

[5]The measure of pessimism I use is the percentage of respondents who expect their life to be worse in the following year than in the current one.

[6]For measuring consumer confidence I use the Consumer Confidence Indicator published by the European Commission.

and even analyst-firm fixed effects.

To study how sudden shocks to cultural biases affect stock recommendations, I investigate three episodes of political conflict between various European countries: the European debt crisis, Brexit, and the Iraq war. The European debt crisis of 2011-2013 was the culmination of a North-South divide in economic performance and represented the second dip of the Eurozone's double dip recession in the aftermath of the financial crisis of 2008.[7] It involved bailouts of several South European states, while Northern Europe was largely perceived to be paying for these bailouts. This dynamic created significant antipathy between the Mediterranean and Northern European states. Stories invoking stereotypes of lazy Mediterraneans were common in the North European media and even in political discourse.[8] I find that North European analysts issue significantly more negative stock recommendations on South European companies during the crisis, consistent with increasing negative bias introduced by the crisis.[9] During the crisis, Northern analysts are between 10 and 23 percentage points less likely to assign Southern firms a buy recommendation, depending on the model specification. I find no similar effect when the analyst is South European and the firm North European.

The UK's decision to leave the European Union following the referendum in June 2016, and the subsequent political disarray, likely represented a substantial shock to cultural perceptions about Britain. On March 29, 2017, Prime Minister Theresa May formally triggered Article 50 and began the two-year countdown to the UK formally leaving the EU (commonly known as "Brexit"). The ensuing process to negotiate the terms of withdrawal and the future relationship between the EU and the UK has been characterised by many observers as a "mess" or "shambles", and arguably affected the general perception of the British.[10] I find that there is a significant divergence of views on UK firms between British and other European analysts following the Article 50, with other European analysts issuing substantially more negative recommendations on UK firms than British analysts. The estimated coefficients suggest that the increase in likelihood of British analysts assignining a buy recommendation to a UK firm increases by more than 30 %-points relative to other analysts. The results are robust to including country-pair and even analyst-firm fixed effects, although

[7]For discussion of the crisis, see, e.g., Landesmann (2015) and Lane (2012).

[8]In 2010, during the EU negotiations of a Greek bailout, the Swedish Finance Minister, Anders Borg, said: "Obviously, Swedes and other taxpayers should not have to pay for Greeks who choose to retire in their 40s", while Der Bild, the German tabloid and the largest newspaper in Europe, declared that "Greece, but also Spain and Portugal have to understand that hard work – meaning ironfisted money-saving – comes before the siesta".

[9]For the purposes of this analysis, I define *Northern Europe* as Germany, UK, Netherlands, Austria, Sweden, Denmark, and Finland, and *Southern Europe* as Portugal, Italy, Greece, and Spain.

[10]Martin Wolf, the chief economics commentator at the Financial Times wrote: "The UK once had a deserved reputation for pragmatic and stable politics. That will not survive the spectacular mess it is making of Brexit."

in the latter case the estimated coefficients are somewhat smaller.

As the last case study, I investigate the implications of the onset of the Iraq war in 2003. This war caused one of the major political rifts between the UK and France in recent decades. Following months of tensions between the US/UK alliance and France (and to a lesser extent Germany) over Iraq, the US and the UK sought a UN Security Council resolution authorizing the use of force against Iraq in February 2003. France, together with Russia, announced that it was ready to veto the resolution. This led the US and the UK to abandon their attempts to secure a resolution and the decision to attack Iraq without one in March 2003. I perform a regression analysis around the the invasion date and find that French analysts issue significantly more negative stock recommendations on British companies following the invasion.

In the last section of the paper, I perform additional analysis on the market reaction to recommendation announcements, the cross-sectional determinants of the cultural bias effect, and robustness checks. First, if analyst recommendations are systematically biased because of the analyst's cultural biases, buy recommendations by more positively biased analysts might be less useful than buy recommendations by more negative analysts. This is because the hurdle for issuing a buy recommendation is lower for positively biased analysts. The reverse might be expected for sell recommendations. If the market recognizes this, a higher trust bias is associated for lower (less positive) announcement returns for buy recommendations (less useful information), but also lower (more negative) announcement returns for sell recommendations (more useful information). These predictions are consistent with the findings of Lai and Teo (2008) in the context of home bias in Asian stock recommendations. I find evidence that is consistent with the prediction when it comes to buy recommendations. A higher trust bias is associated with significantly lowert announcement returns. This effect is larger for upgrades to buy than for all buy recommendations. For sell recommendations (or downgrades to sell), there is no statistically significant relationship between trust bias and announcement returns.

To explore the cross-sectional determinants of the strength of the cultural bias effect, I use a Eurobarometer-based measure of attitude toward globalization. My results suggest that analysts from countries that are more negative towards globalization exhibit significantly larger cultural bias effect in their stock recommendations. I also investigate whether analyst experience and broker size matter. Experience might result in learning about the firm itself, as well as generally getting more skillful at analyzing companies.[11] This would suggest experience should result in smaller effet cultural biases. Alternatively, analysts might become

[11]For example, Seru, Shumway, and Stoffman (2010) find evidence of at least some individual investors learning through trading.

more entrenched over time and hence have weaker incentives to work hard.[12] This could result in larger reliance on heuristical thinking, in part driven by cultural biases. Larger brokers are likely to be more attractive employers for analysts, which means that analysts working at them are both better (screening effect) and face more competitive pressure.[13] Both of these arguments should result in analysts working at larger brokers to be less affected by cultural biases. Consistent with the predictions, I find that analysts with more experience generally, and covering the same firm specifically, are *more* affected by their cultural biases.

This paper provides novel evidence of cultural biases affecting the judgment of sell-side analysts. While there are prior papers on cultural bias, the setting of equity analysis is in many ways cleaner than most prior studies of cultural biases in economic activity, such as trade (Guiso et al., 2009) or venture capital investments (Bottazzi et al., 2016). My results show that even financial professionals suffer from cultural biases that affect their decision making to a substantial degree. This contrasts to some extent the results of, e.g., List, Haigh, and Nerlove (2005) and Alevy, Haigh, and List (2007).

The cultural biases I document are related to the in-group bias found by (Jannati, Kumar, Niessen-Ruenzi, and Wolfers, 2016) and the home bias shown by (Lai and Teo, 2008). They are, however, broader than either of those. My findings of the relationship between the effect cultural biases and general sentiment are also entirely new in the literature, as are my results on the effect of firm names having a priming effect on cultural biases. The three case studies I investigate also show sudden shocks to cultural perceptions can cause significant short-term shifts in stock recommendations. In the two earlier cases, the European debt crisis and the Iraq war, the shift was transitory, and the biases introduced disappeared shortly after the incidents that triggered them. In the case of Brexit, it remains to be seen whether the shift is transitory or more permanent.

2 Literature review and hypothesis development

2.1 Trust and cultural bias

Trust is an essential component of virtually every commercial transaction. A number of studies suggest a positive relationship between trust and economic growth (e.g., Knack and Keefer, 1997 and Temple and Johnson, 1998). Guiso, Sapienza, and Zingales (2004) find that trust-enhancing social capital is an important determinant of financial development,

[12]This idea is consistent with, e.g., the findings of Bertrand and Mullainathan (2003) on managers preferring the quiet life when shielded from competition.

[13]The latter argument is consistent with the findings of Hong and Kacperczyk (2010), who show that increased competition reduces bias in analyst earnings forecasts.

while Guiso, Sapienza, and Zingales (2008) show the importance of trust for stock market participation. La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1997) show that trust is essential for the existence and operation of large organizations. Bloom, Sadun, and Van Reenen (2012) find that trust increases aggregate productivity by affecting the organization of firms and allowing them to decentralize their operations.

Guiso et al. (2009) show that higher bilateral trust between two countries leads to more trade, more portfolio investment, and more direct investment between them. Furthermore, they show that bilateral trust is affected not only by the characteristics of the country being trusted, but also by cultural aspects of the match between trusting country and trusted country, such as their history of conicts and their religious, genetic, and somatic similarities. Similarly, Bottazzi et al. (2016) study the role of bilateral trust in venture capital investments and find that trust between nations positively predicts venture capital firms' investment decisions, but that it has a negative correlation with successful exits. Fisman, Paravisini, and Vig (2017) find evidence that cultural proximity between lenders and borrowers increases the quantity of credit and reduces default, using data from an Indian bank.

Cultural biases have been shown to affect individuals' investment decisions. For example, Grinblatt and Keloharju (2001) show that investors are more likely to hold, buy, and sell the stocks of Finnish firms that are located close to the investor, that communicate in the investor's native tongue, and that have chief executives of the same cultural background. Morse and Shive (2011) find evidence that investors in more patriotic countries have a greater home bias in their equity selection. Kumar, Niessen-Ruenzi, and Spalt (2015) find that name-induced stereotypes affect the investment choices of U.S. mutual fund investors. Managers with foreign-sounding names have lower fund inflows, and this effect is stronger among funds with investor clienteles more likely to be suspicious of foreigners.

2.2 Information content and biases and equity analysis

Sell-side equity analysts are finance professionals meant to perform fundamental analysis of companies and industries, thereby helping investors to make informed decisions and the market to allocate capital efficiently. There is evidence of useful information content in analyst recommendations. Womack (1996) provides some of the first evidence of the market timing and stock picking abilities of analysts. Barber, Lehavy, McNichols, and Trueman (2001) show that portfolios formed from consensus recommendations yield significant abnormal returns, while the results of Jegadeesh, Kim, Krische, and Lee (2004) suggest that recommendation changes are a robust return predictor.

A large related strand of literature studies the biases introduced into equity analysis by

conflicts of interest. These can result from investment banking relationships (e.g., Lin and McNichols, 1998; Bradley, Jordan, and Ritter, 2003; Ljungqvist, Marston, and Wilhelm, Jr., 2006; Ljungqvist, Marston, Starks, Wei, and Yan, 2007), affiliated mutual fund holdings (Mola and Guidolin, 2009; Firth, Lin, Liu, and Xuan, 2013), or analyst career concerns (e.g., Hong, Kubik, and Solomon, 2000; Hong and Kubik, 2003; Jackson, 2005). Affiliated analysts appear to issue worse recommendations (Michaely and Womack, 1999; Barber, Lehavy, and Trueman, 2007), while competition can reduce the effects of biases in equity analysis (Hong and Kacperczyk, 2010; Merkley, Michaely, and Pacelli, 2017b).

2.3 Cultural biases and equity analysis

There is limited existing literature on the impact of culture on equity research. Jia, Wang, and Xiong (2017) utilize segmented dual-class shares of Chinese firms to document differential reactions of local and foreign investors to analyst recommendations, suggesting that social connections between analysts and investors affect investor reactions to analyst recommendations. Du, Yu, and Yu (2017) study the effect of cultural background on the processing of information and find that Chinese analysts issue more accurate forecasts on Chinese firms than non-Chinese analysts. In two related studies on credit analysts, Kempf and Tsoutsoura (2018) find evidence of political biases affecting credit ratings, and Fuchs and Gehring (2017) find a home bias affecting sovereign credit ratings. A home bias in equity investments has been documented by French and Poterba (1991) in the international context, while Coval and Moskowitz (1999) show it also applies in domestic investments in the US. Seasholes and Zhu (2010) provide evidence of local bias by individual investors.

The quality of analysts may differ based on their individual characteristics. Kumar (2010) finds that female analysts issue bolder and more accurate forecasts and their accuracy is higher in market segments in which their concentration is lower. Jiang, Kumar, and Law (2016) finds evidence that political leanings are associated with differences in forecast style and quality. The group dynamics between different analysts may also affect the quality of the analysis they perform. Merkley, Michaely, and Pacelli (2017a) find evidence that cultural diversity among analysts improves the accuracy of consensus forecasts. Malloy (2005) provides evidence that geography matters in equity analysis. He shows that geographically proximate analysts are more accurate than other analysts and have a larger effect on prices. He further finds that underwriter affiliation bias in stock recommendations is concentrated among distant affiliated analysts.

The two most closely related existing studies to this paper are Jannati et al. (2016) and Lai and Teo (2008). Jannati et al. (2016) find evidence of in-group bias in sell-side analyst

forecasts and recommendations, manifested in male analysts having lower assessments of firms headed by female CEOs than of firms headed by male CEOs. Their results are similar if in-groups are defined based on domestic vs. foreign nationality or political attitudes. These findings suggest that personal biases related to nationality can affect stock recommendations. Lai and Teo (2008) find evidence of a home country bias in equity analyst recommendations in Asia.

Based on the evidence of a number sources of individual bias in equity research, as well as the several studies documenting cultural biases in other areas of financial markets and economic activity, I formulate my main hypothesis as follows:

Hypothesis: *Analysts are more likely to issue positive stock recommendations for companies based in countries toward which they have a more positive trust bias.*

3 Data and methodology

3.1 Measuring cultural trust bias

To measure the level of cultural trust bias between two countries, I follow the methodology used by Guiso et al. (2009), based on the trust measure in Eurobarometer surveys. These surveys, discussed in detail in Guiso et al. (2009), are sponsored by the European Commision and conducted yearly to measure the social and political attitudes and awareness of citizens within the European Union. The trust measure is based on how much citizens of one country say they trust the citizens of each other country (including their own). The specific question asked is: "I would like to ask you a question about how much trust you have in people from various countries. For each, please tell me whether you have a lot of trust, some trust, not very much trust, or no trust at all." This question was included in various survey waves, with the latest one being in 1996.[14] Following the methodology of Bloom et al. (2012) and Bottazzi et al. (2016), I define my main measure of bilateral trust, *Trust*, as the proportion of people that say they have a lot of trust toward the country in question.

Of course, the generalized level of trust does not say anything about a cultural bias. Some nationalities may fundamentally be more trustworthy than others, while some nationalities may generally trust people more than others. To remove these systematic differences in trustworthiness and the tendency to trust, I follow the methodology used by Guiso et al. (2009). I regress Trust on a full set of country dummies for the origin and destination of trust, as well as dummies for the survey year:

[14]See Guiso et al. (2009) Online Appendix for a detailed summary.

$$\begin{aligned} Trust_{i,j,t} =& \alpha_0 + \alpha_1 \times Origin\ country_i + \alpha_2 \times Destination\ country_j \\ &+ \beta \times Year_t + \epsilon_i \end{aligned} \tag{1}$$

I define *Trust bias* as the residual from this regression. By construction, this Trust bias represents the component of Trust that differs from the consensus level of trust. The trust bias values for each analyst-firm country pair are shown in Table 1. Table IA.1 shows the unadjusted original Trust values.

The question on bilateral trust was included in several Eurobarometer survey waves from 1970 to 1996. I start my sample from 1996, so the Trust bias variable I use does not change over the sample period. Guiso et al. (2009) provide an extensive analysis of the determinants of bilateral trust, using the Eurobarometer data. Their results suggest that factors associated with higher bilateral trust include common language and common linguistic roots, religious similarity, genetic and somatic similarity, and similar legal origin. In contrast, geographic distance, history of wars, and differences in wealth level are associated with lower levels of bilateral trust. Notably, essentially all of these variables are time-invariant, suggesting that cultural biases do not change quickly.

3.2 Analyst recommendation data, nationalities, and geography

I use analyst recommendations data from IBES to construct a comprehensive dataset of analyst-firm-month observations of stock recommendations for all listed companies based in the 15 West European countries included in the Eurobarometer trust data, namely Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, and the UK. I obtain company location data from Compustat Global. To avoid companies headquartered in locations that are not relevant for their operations, I require that the company's location and country of incorporation are the same in Compustat Global.

I obtain analyst surnames from the IBES Recommendations Detail file. I then estimate analysts' nationalities based on their surnames, using data from *Forebears.io*, a genealogical online directory of sources for family history research. This website, launched in 2012, has a dictionary of 11 million surnames, including information on their geographic distribution. I assign an estimated nationality for each analyst based on the country that has the highest frequency of the analyst surname. For my final sample, I retain analysts whose country of origin is one of the 15 countries including in the Eurobarometer trust data. This leaves me with a final sample of 1,281,885 analyst-firm-month observations. In all my regression analyses I include analyst-month and firm-month fixed effects, which effectively limits the

regression sample to analysts that cover at least two stocks in the 15 countries included in a given month, and firms that are covered by at least two analysts from these countries.

To control for the effect of geography, I calculate the distance in km between the company headquarter city and the main financial center city of the analyst's home country. In most cases this is the capital of the country, but for Germany and Italy I use Frankfurt and Milan, respectively, as these are substantially more important financial centers than Berlin or Rome. The weakness of this methodology is that I cannot observe where the analyst is actually located, but it is unlikely to create a systematic bias in the results. I obtain city coordinate data from the MaxMind WorldCities database.[15]

3.3 Measures of general sentiment and attitudes toward globalization

To study the determinants of the time variation in the effect of cultural biases, I use two different indicators of general sentiment within the European Union. First, I use a Eurobarometer-based measure of pessimism. I define this *Pessimism* variable as the proportion of people in Europe who responded "Worse" to the question "What are your expectations for the year to come: will next year be better, worse, or the same, when it comes to your life in general?" This question has been included in Eurobarometer surveys frequently since October 1996, so this measure allows a long consistent time series of Europe-level pessimism.

The second measure I use is the Consumer Confidence indicator, published by the European Commission (EC). This is a monthly measure of consumer confidence that is based on four questions that are part of a regular harmonised survey conducted by the EC in the European Union. The questions that this indicator is based on are:

- How do you expect the financial position of your household to change over the next 12 months?
- How do you expect the general economic situation in this country to develop over the next 12 months?
- How do you expect the number of people unemployed in this country will change over the next 12 months?
- Over the next 12 months, how likely will you be to save any money?

To assess the cross-sectional determinants of the strength of cultural biases, I use a Eurobarometer-based measure of attitudes toward globalization in each of the countries in

[15] At the time of this writing, the data are available online at: https://www.maxmind.com/en/free-world-cities-database.

my data. I defined an *Anti-globalization* variable as the proportion of people in the country who responded "Globalisation represents a threat to employment and companies in (OUR COUNTRY)" when asked "Which one of the following two statements is closest to your opinion regarding globalisation?" The alternative was "Globalisation represents a good opportunity for (NATIONALITY) companies thanks to the opening-up of markets." This question was included only in three Eurobrometer survey waves, in June 2009, October 2009, and May 2012. I use the latest available values for the period after May 2012. This means that the variable may be somewhat dated in the later years of the sample, but it seems unlikely that the relative rankings of countries based on this metric would have changed substantially. A vast majority of the variation in the responses during the three survey waves was between different countries, while the time variation within countries appears modest.

3.4 Description of the data

Table 2 shows the number of observations by analyst and company country. Germany has both the largest number of company observations as well as the largest number of analyst observations in my data, followed by France and the UK on both measures. For most companies, the majority of analysts come from the same country where the company is located.

Table 3 shows summary statistics for the analyst-company-year observations in the sample. The average recommendation, coded from one (*Strong sell*) to five (*Strong buy*), is 3.529, roughly half-way between *Hold* (3) and *Buy* (4). The median recommendation is Buy (4). The average number of active recommendations for a firm in a given month is slightly above 16. This number includes also recommendations from analysts that are from countries outside the 15 European countries that are included in the sample. Slightly more than half of the monthly observations are buy recommendations.

The average Trust bias is 0.218. This variable is calculated as the residual from regressing the Trust variable on a full set of origin-of-trust country dummies and destination-of-trust-country-dummies, as well as year dummies. It can hence be interpreted as a "bias" component of trust, as the regression coefficients capture the average level of trustworthiness, as well as the average tendency to trust. Nearly 89% of observations are cases where the analyst has a positive trust bias toward the firm home country. This is mainly driven by the fact that in 74% of the observations the analyst comes from the same country as the firm, and all nationalities in the sample have a positive bias toward themselves. In 12.6% of the observations the countries are different but share a border. The average distance between

the company's headquarter city and the financial capital of the analyst's country of origin is 300 km.

The average broker size, measured as the number of active analysts, is 46, while the median size is 25. This reflects the highly skewed distribution of broker size. The average number of firms that the same analyst covers is slightly below 12. The average time the analyst has covered the given stock is 3.0 years, while the average analyst overall experience is nearly 6 years.

Nearly seven percent of the observations are attributable to firms classified as eponymous, meaning that the firm name mentions the name of its home country.

4 Main results

4.1 Trust bias and analyst recommendations

To illustrate the effect of cultural biases, I plot the distribution of analyst recommendations depending on whether the analyst's country of origin has a positive or negative *Trust bias* toward the company headquarter country. Figure 1 shows the distribution of analyst recommendations for observations where trust bias is positive and those where it is negative. Positive trust bias is visibly associated with more positive recommendations than negative trust bias. To test for the relationship between analyst recommendations and trust bias, I perform regressions of the following form:

$$Recommendation_{i,j,t} = \alpha_0 + \alpha_1 \times Trust\ bias_{i,j} + \beta \times X_{i,j,t} + \epsilon_i \tag{2}$$

where $Recommendation_{i,j,t}$ is the analyst recommendation for company i by analyst j during month t, coded from one to five. One denotes "Strong sell", the most negative recommendation, while five denotes "Strong buy", the most positive one.

$Trust\ bias_{i,j}$ is the estimated trust bias by the country of origin analyst j toward the home country of company i. $X_{i,j,t}$ is a vector of controls, including geographic distance, *Same country*-dummy, *Share border*-dummy, as well *firm-month joint fixed effects* and analyst-month joint fixed effects.

The results, shown in Table 4, provide support for my hypothesis. As shown in columns 1 and 2, a higher trust bias is associated with significantly more positive stock recommendations. Importantly, these results are effectively *within analyst* and within firm in each month, given any firm-specific and analyst-specific factors are captured by the fixed effects I include. Therefore, the bias effect is not driven by certain firms being better or worse, or by certain analysts being more positive or negative. The estimates only capture the relative

differences in recommendations assigned by each analyst to each firm. Column 2 shows that the estimated coefficient for *Same country*, a dummy taking the value one if the analyst and firm are from the same country, is positive and statistically significant at the 10% level. This suggests that there is some level of home bias that does not get fully captured by the trust bias variable.

Columns 3 and 4 shows similar results using *Buy recommendation* and *Sell recommendation* dummies as the dependent variable. The results are consistent with those using the Recommendation (1-5) as the dependent variable. A more ositive trust bias is associated with a significantly higher likelihood of buy recommendation and a significantly lower likelihood of sell recommendation.

4.2 Eponymous firms and priming

If analyst recommendations are affected by the analyst's cultural biases, it seems possible that firms whose nationality is more visible might be more affected. In other words, making the firm's home country more salient might activate the analyst's cultural biases without the analyst being aware of it, a phenomenon referred to as priming in the experimental psychology literature (see, e.g., Bargh and Chartrand, 2000). Priming has been used extensively in experimental economics in recent years. For example, Cohn et al. (2014) find that bank employees behave more dishonestly when their professional identity as bank employees is rendered salient. Callen et al. (2014) find that asking subjects to recollect fearful experiences reduces risk appetite. Cohn et al. (2015) show that financial professionals primed with a financial bust are more fearful and risk averse than those primed with a boom.

To study whether firm names might cause a priming effect and activate cultural biases, I define firms as *Eponymous* if the firm name includes the name of its home country. Examples of such eponymous firms include Deutsche Bank, Hellenic Telecommunications Organisation, Telecom Italia, and Bolsas y Mercados Espanoles. Nearly seven percent of the monthly observations in my data are attributable to such eponymous firms.

Table 5 shows the results of regression analysis including an interaction term of trust bias with the eponymous firm indicator. The recommendatinos for firms classified as eponymous are significantly more affected by the analyst's cultural biases. This suggests that firm name can have a priming effect on the analysts issuing stock recommendations.

4.3 Trust bias toward CEO home country

The analysis in this paper generally explores the cultural biases among the analyst home country's citizens toward the firm headquarter country. However, the cultural biases toward

the firm's management might have a similar effect. In this section, I hence extend the analysis to include the trust bias by analyst home country toward the CEO home country for a subsample where I can determine the CEO nationalities. I obtain data on firm CEOs from Boardex. For the CEOs whose nationalities are missing in the Boardex data, I estimate the nationality based on their surname, using data from Forebears.io. This methodology provides me with CEO nationalities for 747,838 analyst-firm-month observations, of which in 631,099 the CEO is from the 15 European countries included in my trust data. The distribution of observations by CEO country and analyst country, as well as firm country, is shown in the Internet Appendix Tables IA.5 and IA.6.

The results are shown in Table 6. A more positive trust bias toward the CEO country is associated with significantly more positive stock recommendations, as is trust bias toward the firm country. The estimated coefficient for the trust bias toward CEO country is lower than that for the trust bias toward firm country, but statistically more significant. These results hold using both the coded recommendation (1-5), as well as buy recommendation dummy, as the dependent variable. They are also robust to including analyst-firm country pair fixed effects, which means that the variation in trust toward CEO country within analyst-firm country pairs alone is associated with statistically significant differences in stock recommendations.

4.4 The effect of cultural biases and general sentiment

It seems reasonable that the effect of cultural biases would depend on context. To study the time variation in the effect, I first use regression analysis to estimate monthly coefficients for the effect of trust bias on analyst recommendations. The regression is of the following form:

$$Recommendation_{i,j,t} = \alpha_0 + \alpha_1 \times Month_t \times Trust\ bias_{i,j} + \beta \times X_{i,j,t} + \epsilon_i \qquad (3)$$

where *Month* is a vector of dummies for each month in the sample period, with other variables the same as discussed above. Figures 2.A and 2.B plot these monthly coefficients against Pessimism, a Eurobarometer-based variable measuring the general level of pessimism in Europe, and Consumer Confidence Indicator (CCI), a measure of general consumer confidence in Europe. These charts suggest a clear positive relationship between the effect of biases and the level of pessimism, and similarly, a negative relationship between effect of biases and consumer confidence.

To more formally test these relationships, I perform regressions of the following form:

$$Recommendation_{i,j,t} = \alpha_0 + \alpha_1 \times Pessimism_t \times Trust\ bias_{i,j} + \beta \times X_{i,j,t} + \epsilon_i \qquad (4)$$

The results of these regressions are shown in Panel A of Table 7. I perform the analysis using both recommendation (1-5) and buy recommendation dummy as dependent variables. In all of these specifications, the results suggest a significant positive relationship between the effect of trust bias and the level of pessimism. In other words, during times of negative sentiment, cultural biases have a significantly stronger effect. Importantly, these results are robust to including country-pair fixed effects and even analyst-firm fixed effects. Panel B shows the same analysis using CCI as the sentiment measure. The results are the reverse of those using pessimism. Higher levels of consumer confidence are associated with significantly weaker effect of cultural biases.

5 The impact of shocks to cultural biases

5.1 European debt crisis and North-South cultural bias

In the analysis above, I focus on two measures of cultural bias, trust bias based on Eurobarometer surveys, and home country bias based on whether the analyst and the firm are from the same country. In this section, I explore the implications of specific events that represent shocks to cultural biases. There is limited existing evidence of the impact of shocks to cultural biases in the financial markets. In perhaps the most prominent example, Kumar et al. (2015) find that fund managers with Middle-Eastern-sounding names experience significantly lower fund flows following the 9/11 terrorist attacks.

The European debt crisis of 2011-2013 was the culmination of a North-South divide in economic performance, as discussed by, e.g., Landesmann (2015) and Lane (2012), and represented the second dip of the Eurozone's double dip recession in the aftermath of the financial crisis of 2008. It involved bailouts of several South European states, while Northern Europe was largely perceived to be paying for these bailouts. This dynamic created significant antipathy between the Mediterranean and Northern European states. Stories invoking stereotypes of lazy Mediterraneans were common in the North European media and even in political discourse. In 2010, during the EU negotiations of a Greek bailout, the Swedish Finance Minister, Anders Borg, said: "Obviously, Swedes and other taxpayers should not have to pay for Greeks who choose to retire in their 40s", while Der Bild, the German tabloid and the largest newspaper in Europe, declared that "Greece, but also Spain and Portugal have to understand that hard work – meaning ironfisted money-saving – comes before the

siesta".

Given the significant media attention given to negative stereotypes of South Europeans during the crisis, I study the changes in analyst recommendations during the crisis period when the analyst is North European and the firm from Southern Europe. For the purposes of this analysis, I define *Northern Europe* as Germany, UK, Netherlands, Austria, Sweden, Denmark, and Finland, and *Southern Europe* as Portugal, Italy, Greece, and Spain.

I define a variable *Crisis* as a dummy taking the value one during the period Q4 2011-Q1 2013, which is the related Eurozone recession period as classified by CEPR. I then perform regression analysis interacting this variable with dummies indicating analyst-firm pairs where the analyst is Northern and the firm Southern, as classified above. The regression results are shown in Table 8. Panel A shows that North European analysts issue significantly more negative stock recommendations on South European companies during the crisis, consistent with increasingly negative bias introduced by the crisis. This effect is economically large. My regression analysis suggests that during the crisis, Northern analysts are between 10 and 23 percentage points less likely to assign Southern firms a buy recommendation, depending on the model specification. I also estimate monthly coefficients for this interaction variable and plot them in Figure 3, where the increasingly negative bias is clearly visible. I find no similar effect when the analyst is South European and the firm North European, as shown in Panel B.

5.2 Brexit and UK vs. the rest of Europe

The UK's decision to leave the European Union following the referendum in June 2016, and the subsequent political disarray, likely represented a substantial shock to cultural perceptions about Britain. On March 29, 2017, Prime Minister Theresa May formally triggered Article 50 and began the two-year countdown to the UK formally leaving the EU (commonly known as "Brexit"). The negotiation process between the EU and the UK that followed Article 50 has been characterised by many observers as a "mess" or "shambles".[16] Martin Wolf, the chief economics commentator at the Financial Times wrote: "The UK once had a deserved reputation for pragmatic and stable politics. That will not survive the spectacular mess it is making of Brexit."

To study the changes of the perceptions of European analysts on UK firms, relative to UK analysts, I study the changes in relative home bias exhibited by UK analysts. In Figure

[16]See, e.g., "Brexit vote shambles blows hole in Theresa Mays authority" by the Financial Times: https://www.ft.com/content/2b9a95f8-307c-11e9-8744-e7016697f225 or "The best way out of the Brexit mess" by the Economist: https://www.economist.com/leaders/2018/12/08/the-best-way-out-of-the-brexit-mess .

4, I plot the estimated monthly coefficients for a dummy indicating observations where both the analyst and the firm are from the UK. I control for general home bias on a monthly basis, so this coefficient represents the difference in the home bias for British analysts vs. other analysts. From this chart, it is clear that there is a significant divergence of views on UK firms between British and other European analysts following the Article 50, with other European analysts issuing substantially more negative recommendations on UK firms than British analysts.

I test this change more formally by a regression analysis including an interaction term between british analyst, a dummy indicating same country, and a dummy taking the value one after the Article 50. The results, shown in Table 9, show that the divergence between British and other European analysts is statistically significant. Prior to Article 50, the home bias exhibited by British analysts is not significantly different from that exhibited by other analysts. Following Article 50, this difference increases significantly, and the economic magnitude of the shift is large. The estimated coefficients suggest that the increase in likelihood of British analysts assignining a buy recommendation to a UK firm increases by more than 30 %-points relative to other analysts. The results are robust to including country-pair and even analyst-firm fixed effects, although in the latter case the estimated coefficients are somewhat smaller.

5.3 Iraq war and Franco-British cultural bias

As another shock to cultural perceptions, I study the implications of the Iraq war that started in 2003 and caused one of the major political rifts between the UK and France in recent decades. The run-up to the Iraq war took place during the years following 9/11 attacks in the US. In his 2002 State of the Union address, the US president George W Bush identified Iraq – along with Iran and North Korea – as part an "axis of evil". In September 2002, he addressed the United Nations General Assembly and warned Iraq that military action will be unavoidable if it did not comply with UN resolutions on disarmament. Also in September 2002, the UK published a dossier on the threat posed by Iraq. It included the claim that Saddam Hussein has weapons of mass destruction which could be used within 45 minutes. In November 2002, the UN Security Council unanimously passed resolution 1441, giving Iraq "a final opportunity to comply with its disarmament obligations" and warning of "serious consequences" if it does not.

In February 2003, The US and the UK, in favor of a military intervention in Iraq, submitted a draft resolution to the UN. It stated that Iraq had missed its "final opportunity" to disarm peacefully. France, together with Russia, announced that it was ready to veto

the UN Security Council resolution that would give Iraq seven days to disarm. Following the announcement, The US and the UK abandoned their attempt to secure a second UN resolution authorising force. On 20 March 2013, they nevertheless began the invasion of Iraq, "Operation Iraqi Freedom", marking the beginning of the Iraq war.

A notable study exploiting this shock to cultural perceptions is Michaels and Zhi (2010), who show that the events leading to Iraq war were associated with significant anti-French sentiment in the US. France's favorability rating in the US fell by 48 percentage points, and the worsening attitudes reduced bilateral trade by about 9 percent.

I perform a regression analysis around the the invasion date, using a sample between 2001-2004, and including an interaction between a *Post* dummy, taking the value one following the invasion in March 2003, and a dummy indicating a French analyst and a British company, and vice versa. The results, shown in Panel A of Table 10, show that French analysts issue significantly more negative stock recommendations to British firms following the Iraq invasion. As shown in Panel B, I find no similar effect for British analysts issuing recommendations on French companies. Figure 3 shows monthly coefficient estimates around the onset of the war. The area highlighted in the chart as "Iraq war" begins from the invasion in March 2003 and ends in December 2003, when US forces captured Saddam Hussein.

6 Additional analysis and robustness checks

6.1 Stock recommendation announcement returns

If analyst recommendations are systematically biased because of the analyst's cultural biases, that should affect their usefulness. In particular, one might expect buy recommendations by more positively biased analysts to be less useful than buy recommendations by more negative analysts. In other words, the hurdle for issuing a buy recommendation is lower for positively biased analysts. The reverse should be true for sell recommendations. If the analyst has a very positive trust bias toward the firm, issuing a sell recommendation regardless signals a more negative assessment than that of a negatively biased analyst. It hence seems interesting to explore whether the market adjusts for the cultural bias when incorporating the information contained in analyst recommendations. Such adjustment by the market would imply that a higher trust bias is associated for lower (less positive) announcement returns for buy recommendations (less useful information), but also lower (more negative) announcement returns for sell recommendations (more useful information). These predictions are also consistent with the findings of Lai and Teo (2008) in the context of home bias in Asian stock

recommendations.

To study whether the market reaction to stock recommendations differs depending on analyst cultural bias, I calculate the cumulative abnormal returns (CAR) for the two-day window including the announcement day and the next trading day. I estimate abnormal daily returns based on market model and betas, with betas estimated from daily returns during the trading days (-252, -42) relative to the event date. Similar to Loh and Stulz (2018), I exclude the three-day windows around earnings announcement days and all days with multiple stock recommendations, as these days are more likely to be associated with company news announcements. I then perform a regression analysis of the announcement CAR on trust bias. I include analyst firm fixed effects and firm fixed effects, so similar to the other analysis in this paper, the estimated trust bias effect is within analysts and within firm.

The results, shown in Table 11, are consistent with the prediction when it comes to buy recommendations. A higher trust bias is associated with significantly lowert announcement returns. This effect is larger for upgrades to buy than for all buy recommendations. For sell recommendations (or downgrades to sell), there is no statistically significant relationship between trust bias and announcement returns.

6.2 Attitudes toward globalization

To explore the cross-sectional determinants of the strength of the cultural bias effect, I use a Eurobarometer-based measure of attitude toward globalization. This question, included only in the Eurobarometer waves of June 2009, October 2009, and May 2012, asked the respondents "Which one of the following two statements is closest to your opinion regarding globalisation?". I define my *Anti-globalization* variable as the percentage of people in the analyst's country of origin answering "Globalisation represents a threat to employment and companies in (OUR COUNTRY)". The alternative response was "Globalisation represents a threat to employment and companies in (OUR COUNTRY)". This variable thus measures the extent to which people in the analyst's home country perceive globalization as a threat instead of an opportunity. I then perform the same regression analysis as above, adding an interaction term of anti-globalization with trust bias.

The results, shown in Table 12, show that the effect of trust bias is significantly stronger when the analyst is from a country that is more prone to perceive globalization as a threat.

6.3 Analyst experience and broker size

I also investigate whether analyst experience matters. There are two alternative hypotheses for the impact of experience. Experience might result in learning about the firm itself, as well as generally getting more skillful at analyzing companies. For example, Seru et al. (2010) find evidence of at least some individual investors learning through trading. This would suggest experience should result in smaller effet cultural biases. Alternatively, analysts might become more entrenched over time and hence have weaker incentives to work hard. This idea is consistent with, e.g., the findings of Bertrand and Mullainathan (2003) on managers preferring the quiet life when shielded from competition. This could result in larger reliance on heuristical thinking, in part driven by cultural biases.

There are also several reasons why broker size could matter. Larger brokers are likely to be more attractive employers for analysts, which means that analysts working at them are both better (screening effect) and face more competitive pressure. The latter argument is consistent with the findings of Hong and Kacperczyk (2010), who show that increased competition reduces bias in analyst earnings forecasts. Both of these arguments should result in analysts working at larger brokers to be less affected by cultural biases. I test this prediction by including an interaction term between trust and broker size, as measured by the number of analysts working at the same brokerage during the same year.

I perform a regression analysis including an interaction term of trust bias with overall analyst experience, experince covering the given firm, as well as with broker size. The results are shown in Table 13. Both measures of experience are associated with a significantly larger effect of trust bias and home bias. This suggests that cultural biases do not get learnt away over time as the analyst gets more information of the firm in question and gains experience. Instead, it would be consistent with an entrenchment effect. The results also show that the effect of trust bias is significantly weaker for analysts working at larger brokers.

6.4 Robustness check: foreign firms only

In all the trust bias analyses above, I include same country dummy as a control variable to make sure that my results are not driven merely by home country bias. To further check the robustness of the results, I perform an additional robustness check regression analysis of analyst recommendations for a subset excluding all observations where the analyst and the firm are from the same country. Given nearly 74% of observations involve same-country analysts, and since identification including analyst-month and firm-month fixed effects requires that the analyst issues recommendations on at least two companies in the month, and that the firm is issued recommendations by at least two analysts, this substantially reduces the

sample size and hence the statistical power of the analysis.

However, as the results in Table 14 show, the effect of trust bias remains statistically significant even with the foreign-only subsample. In fact, the estimated coefficients are slightly larger than for the full sample. This suggests that the results are indeed not driven by same country-observations.

7 Conclusion

This paper provides compelling evidence that cultural biases, as proxied by a Eurobarometer-based trust bias and home country bias, have a significant effect on equity analysts' stock recommendations. I further find that there is substantial time variation in the effect of such biases, and that the strength of the bias effect is highly correlated with the general sentiment. In other words, bad economic times, when the level of pessimism is high and consumer confidence low, are also the times when cultural biases have the largest effect.

This finding is all the more significant since equity analysts are financial market professionals that are often supposed to be less susceptible to behavioral biases than non-professionals. To the extent that these results generalize to the rest of the population, they might suggest a link between times of economic hardship and increased cultural biases. This might contribute to the rise of nationalism and, perhaps, rightwing populism during economic downturns. Understanding such links remains an important avenue for further research, where this study can help point to some new directions.

My finding that eponymous firms, whose name includes the name of their home country, are more affected by analysts' cultural biases is also novel in the finance literature. While there is a vast literature on priming effects in psychology, my results suggest that there might be significant new applications in financial markets that have not been explored. The finding that analysts with longer tenure are more affected by cultural biases suggests that more research in the entrenchment of stock analysts would be warranted.

Finally, I find evidence that significant political events can introduce new cultural biases that are strong enough to affect stock recommendations. The much-discussed North-South divide in Europe and the stereotypes of lazy Mediterraneans invoked during the European debt crisis created a clearly visible negative bias in the stock recommendations of North European analysts on South European companies. Similarly, the diplomatic rifts between the UK and the rest of Europe amid the Brexit process, as well as between France and the UK over the Iraq invasion can be seen in analyst stock recommendations.

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Appendix A: Definitions of variables

Variable	Definition
Recommendation	Numeric code for analyst recommendation, ranging from 1 (lowest, "sell") to 5 (highest, "buy").
Buy recommendation	Dummy taking the value 1 if the recommendation is "strong buy" (5) or "buy" (4).
Sell recommendation	Dummy taking the value 1 if the recommendation is "strong sell" (1) or "sell" (2).
Trust	Eurobarometer-based bilateral measure of trust. Defined as the proportion of people in country i that trust a lot people from country j.
Trust bias	Residual from a regression of Trust on a full set of country dummies as origin and recipient of trust, as well as year dummies.
Distance	Distance in km between the company headquarter city and the main financial center city in the analyst's home country.
Same country	Dummy taking the value 1 if the company is headquartered in the analyst's home country.
Share border	Dummy taking the value 1 if the company's headquarter country shares a border with the analyst's home country.
Broker size	The number of analysts providing stock recommendations at the same brokerage during the month.
Analyst N firms	The number of firms the analyst covers during the month.
Time covered	The time since the first recommendation issued by the analyst on the given firm.
Analyst experience	The time since the first recommendation issued by the analyst on any firm.
Anti-globalization	Eurobarometer-based measure of negative attitude toward globalization in the analyst's country of origin. Defined as the proportion of people in the country who responded "Globalisation represents a threat to employment and companies in (OUR COUNTRY)" when asked "Which one of the following two statements is closest to your opinion regarding globalisation?" The alternative was "Globalisation represents a good opportunity for (NATIONALITY) companies thanks to the opening-up of markets."
Eponymous	Dummy taking the value 1 if the firm name includes the name of its home country.
N recommendations	Number of active analyst recommendations for the company during the same month. This number includes non-European analysts who are otherwise excluded from the sample.
Pessimism	Eurobarometer-based measure of aggregate pessimism in Europe. Defined as the proportion of people in Europe who responded "Worse" to the question "What are your expectations for the year to come: will next year be better, worse or the same, when it comes to your life in general?"
Consumer confidence (CCI)	Consumer Confidence Indicator within the EU, published by the European Commission.

Figure 1: Distribution of recommendations by trust bias

Distribution of analyst recommendations, categorized into observations where the analyst country's *Trust bias* towards the company country is positive and those where it is negative. Trust bias is the residual from a regression of the average trust score by country i towards country j, including a full set of dummies for the country of origin and country of destination, as well as survey year dummies.

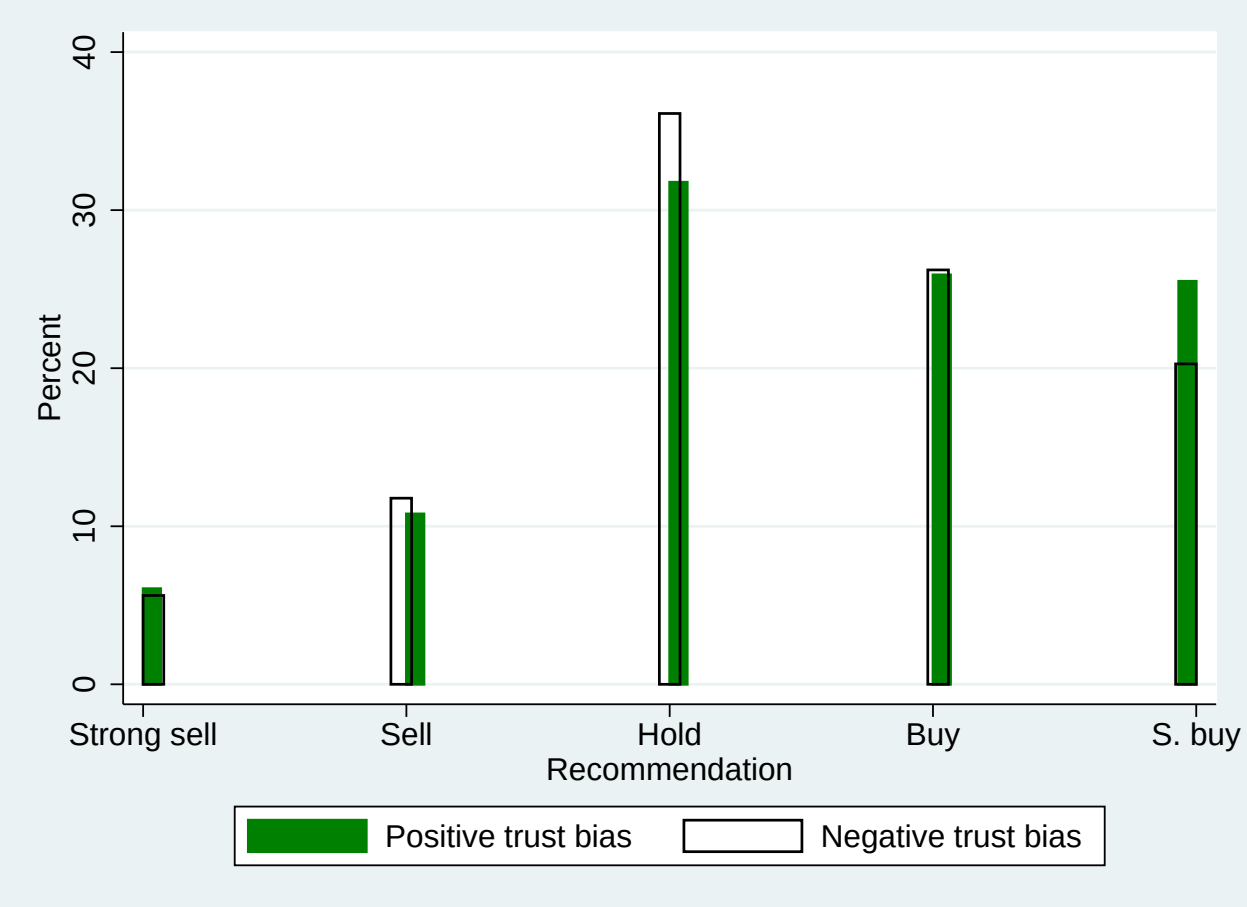


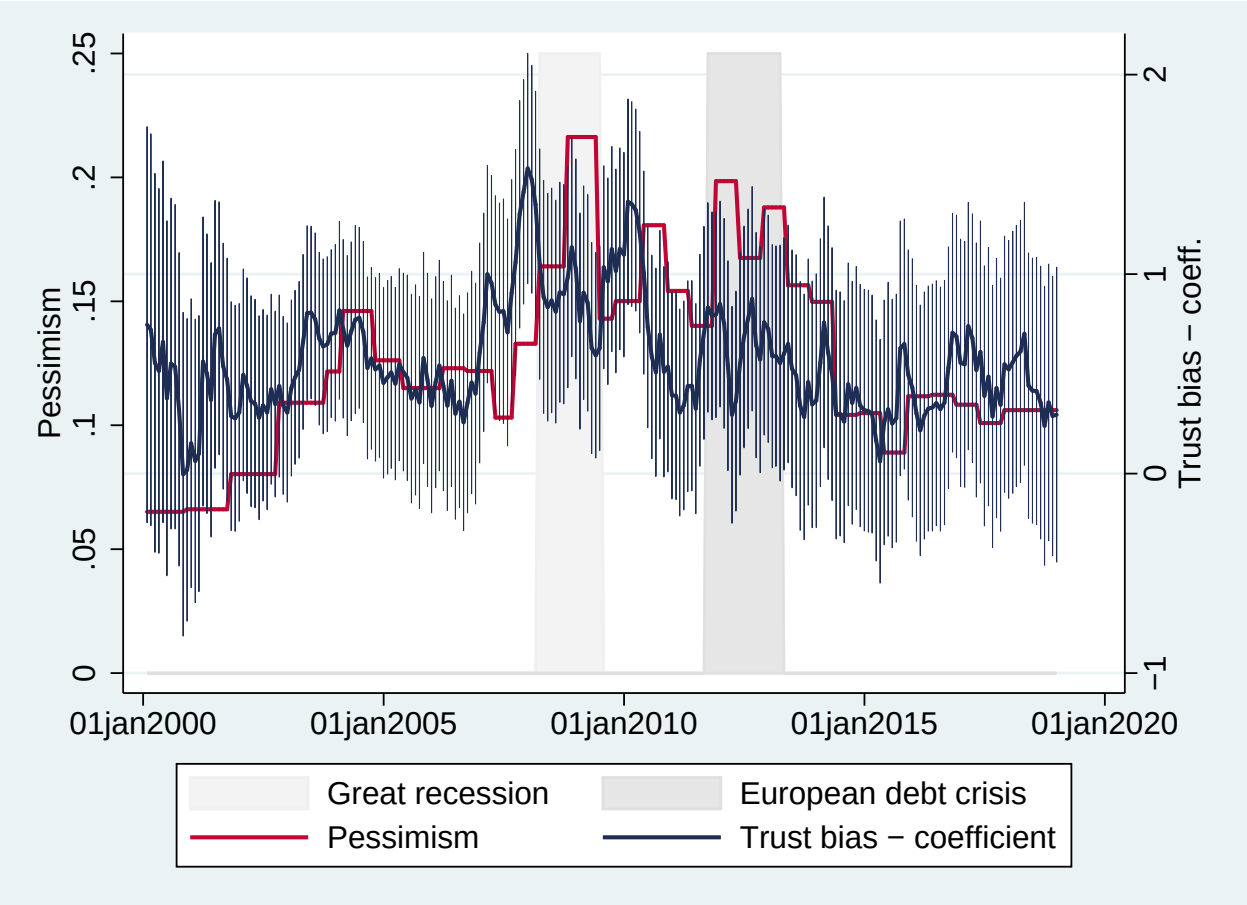
Figure 2: Trust bias vs. pessimism and consumer confidence

Monthly estimates of regression coefficients for *Trust bias* from the below regression, plotted against the aggregate level of pessimism and consumer confidence in the European Union. The highlighted areas show CEPR recessions. Regression equation:

$$Recommendation_{i,j,t} = \alpha_0 + \alpha_1 \times Month_t \times Trust\ bias_{i,j} + \beta \times X_{i,j,t} + \epsilon_i$$

where *Recommendation* is the analyst recommendation, coded from 1 (lowest, "Strong sell") to 5 (highest, "Strong buy"), *Month* is a vector of dummies for each month in the sample period. X is a vector of controls, including *Same country* dummy, *Distance*, and *Share border*, as well as analyst-month and firm-month fixed effects. *Pessimism* is the proportion of people who expect their life to be worse in the next year, based on Eurobarometer surveys. *Consumer confidence* is the Consumer Confidence Indicator in the European Union, published by the European Commission. Variables are defined in Appendix A.

A: Estimated trust bias effect vs. pessimism



B. Estimated trust bias effect vs. consumer confidence

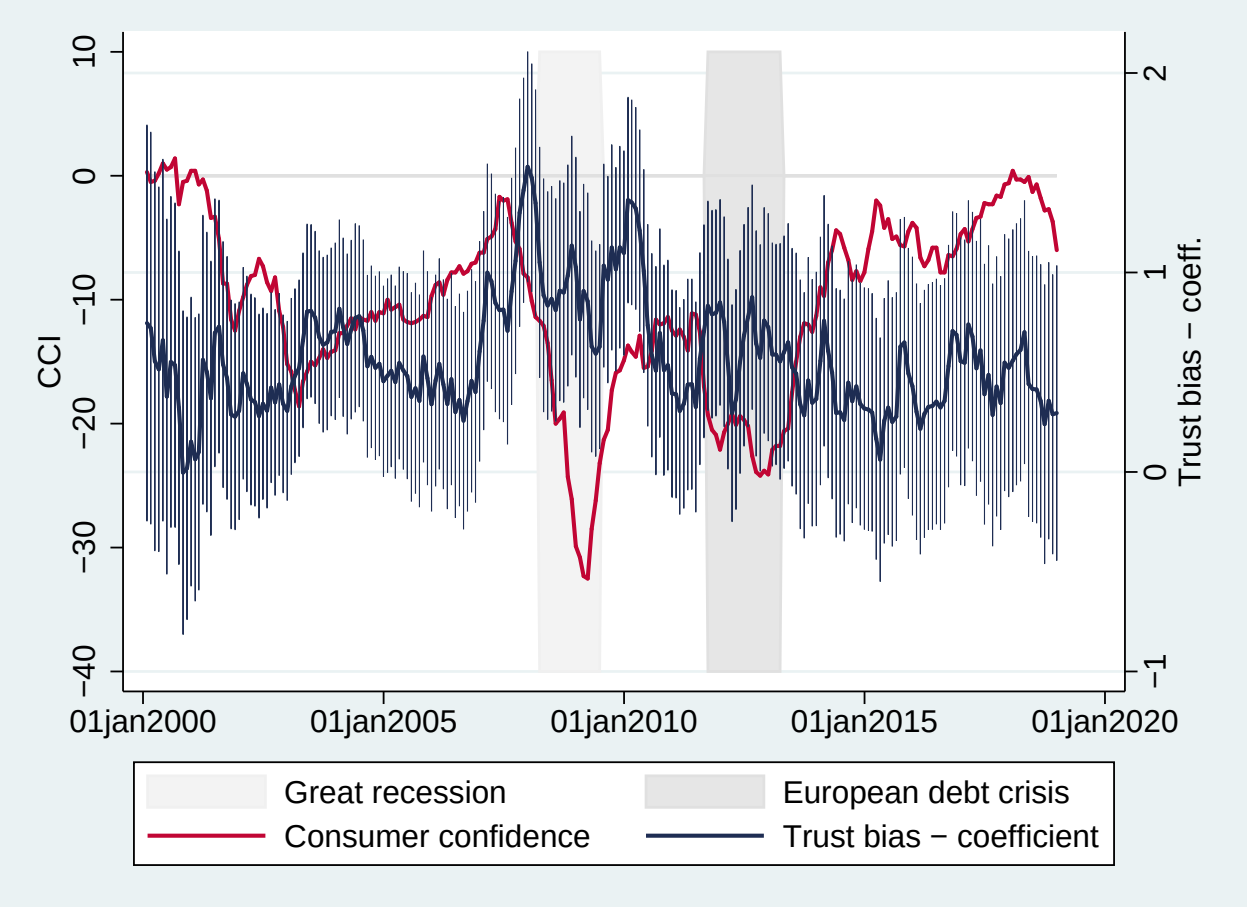


Figure 3: European debt crisis, Northern analysts and Southern firms

Monthly estimates of regression coefficients for *Northern analyst x Southern firm* from the below regression, plotted against the aggregate level of pessimism and consumer confidence in the European Union. The highlighted areas show CEPR recessions. Regression equation:

$$Recommendation_{i,j,t} = \alpha_0 + \alpha_1 \times Month_t \times Northern\ analyst_i \times Southern\ firm_j + \beta \times X_{i,j,t} + \epsilon_i$$

where *Recommendation* is the analyst recommendation, coded from 1 (lowest, "Strong sell") to 5 (highest, "Strong buy"), *Month* is a vector of dummies for each month in the sample period. X is a vector of controls, including *Same country* dummy, *Distance*, and *Share border*, as well as analyst-month and firm-month fixed effects. Variables are defined in Appendix A.

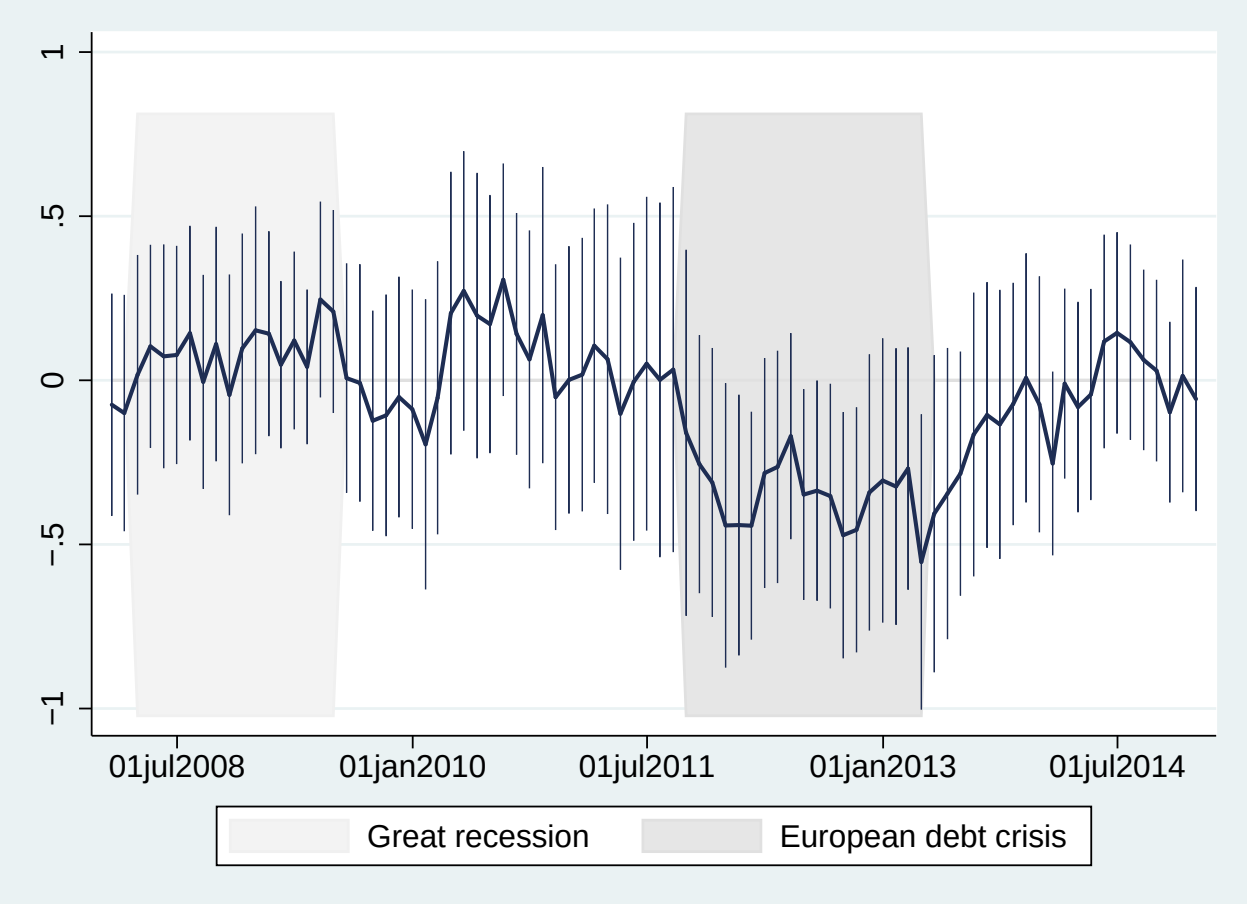


Figure 4: Brexit and UK vs. the rest of Europe

Monthly estimates of regression coefficients for *British analyst x Same country* from the below regression, plotted against the aggregate level of pessimism and consumer confidence in the European Union. The highlighted areas show CEPR recessions. Regression equation:

$$\begin{aligned} Recommendation_{i,j,t} =& \alpha_0 + \alpha_1 \times Month_t \times British\ analyst_i \times Same\ country_{i,j} \\ &+ \alpha_2 \times Month_t \times Same\ country_{i,j} + \beta \times X_{i,j,t} + \epsilon_i \end{aligned}$$

where *Recommendation* is the analyst recommendation, coded from 1 (lowest, "Strong sell") to 5 (highest, "Strong buy"), *Month* is a vector of dummies for each month in the sample period. X is a vector of controls, including *Distance* and *Share border*, as well as analyst-month and firm-month fixed effects. Variables are defined in Appendix A.

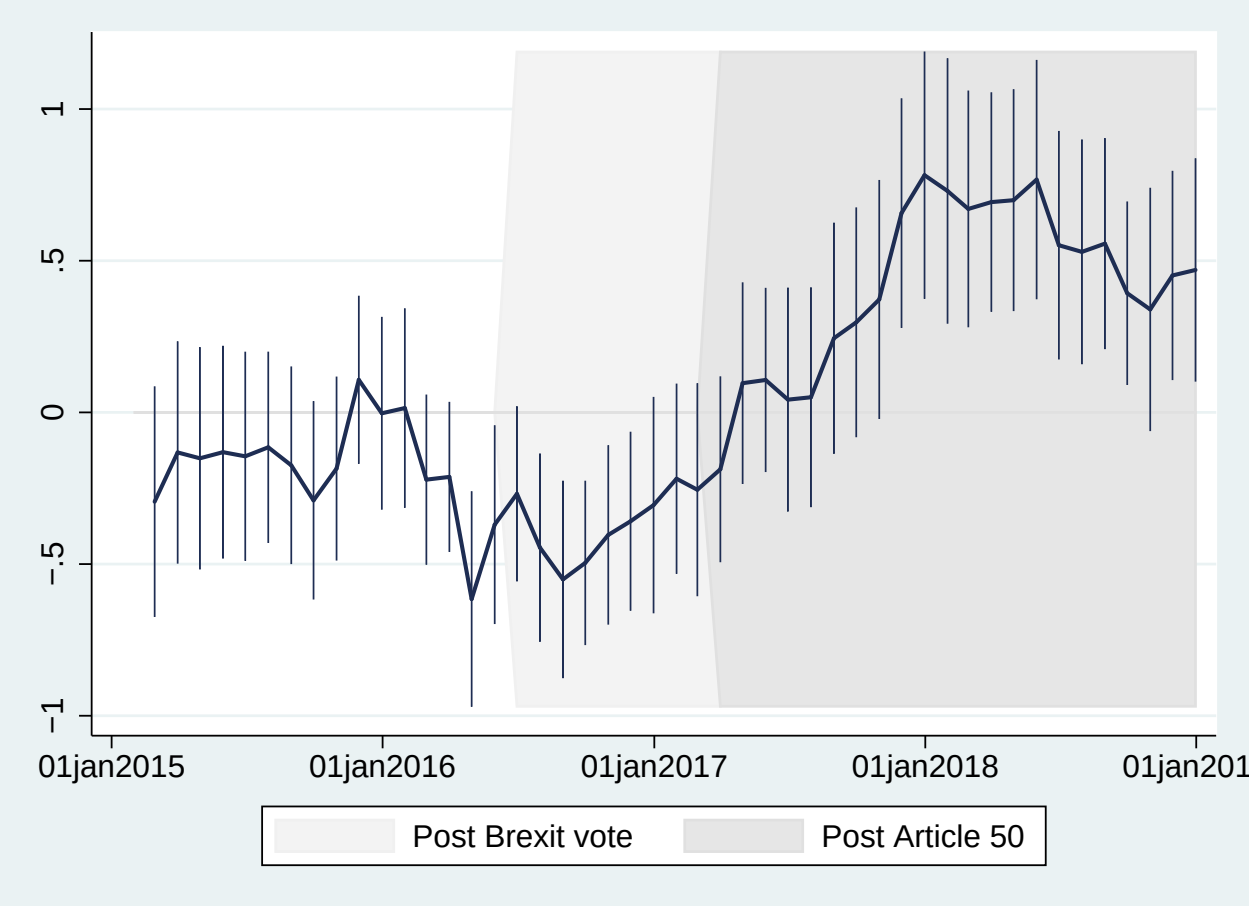


Figure 5: Iraq war, French analysts and British firms

Monthly estimates of regression coefficients for *French analyst x British firm* from the below regression:

$$Recommendation_{i,j,t} = \alpha_0 + \alpha_1 \times Month_t \times French\ analyst_i \times British\ firm_j + \beta \times X_{i,j,t} + \epsilon_i$$

where *Recommendation* is the analyst recommendation, coded from 1 (lowest, "Strong sell") to 5 (highest, "Strong buy"), *Month* is a vector of dummies for each month in the sample period. X is a vector of controls, including *Same country* dummy, *Distance*, and *Share border*, as well as analyst-month and firm-month fixed effects. Variables are defined in Appendix A. The area highlighted as "Iraq war" begins from the invasion in March 2003 and ends in December 2003 when Saddam Hussein was captured by US troops.

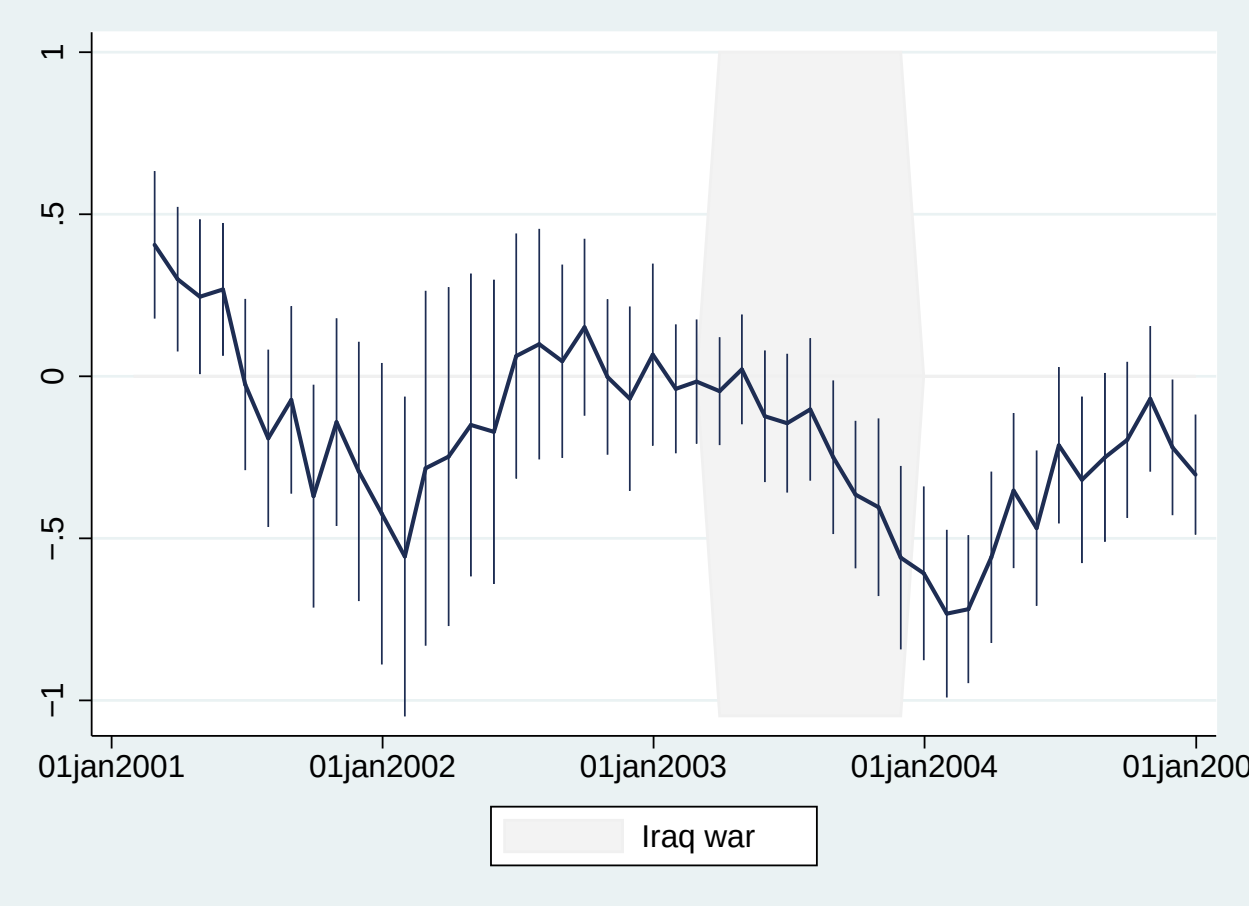


Table 1
Trust bias - By country of origin and destination

	Destination of trust															
Origin of trust	Aus	Bel	Den	Fin	Fra	Ger	Gre	Ire	Ita	NL	Nor	Por	Spa	Swe	UK	Total
Aus	0.38	-0.00	-0.06	-0.04	-0.05	0.10	-0.02	-0.06	-0.01	-0.04	-0.04	-0.03	-0.04	-0.01	-0.08	-0.00
Bel	-0.03	0.12	-0.02	-0.04	0.02	-0.03	-0.00	-0.01	0.02	-0.03	-0.06	0.01	-0.01	-0.04	-0.04	-0.01
Den	0.05	-0.04	0.31	0.04	-0.08	-0.03	-0.05	0.02	-0.04	0.10	0.22	-0.04	-0.06	0.15	0.05	0.04
Fin	0.05	-0.04	0.06	0.36	-0.08	-0.07	-0.10	-0.05	-0.12	-0.03	0.16	-0.12	-0.14	0.09	0.03	0.00
Fra	-0.07	0.04	-0.01	-0.03	0.25	0.06	0.01	0.01	0.05	-0.02	-0.03	0.04	0.04	-0.01	-0.05	0.02
Ger	0.09	-0.03	0.01	-0.02	0.06	0.39	-0.02	-0.05	-0.00	0.00	-0.01	-0.04	-0.02	0.03	-0.07	0.02
Gre	-0.16	-0.13	-0.18	-0.15	-0.07	-0.12	0.42	-0.07	0.01	-0.18	-0.18	-0.02	-0.00	-0.13	-0.14	-0.07
Ire	-0.06	-0.04	-0.07	-0.08	-0.01	-0.05	0.01	0.41	0.06	-0.06	-0.09	0.01	-0.01	-0.10	-0.04	-0.01
Ita	-0.04	-0.03	-0.00	0.00	0.06	0.10	0.01	0.01	0.21	0.01	-0.03	0.00	0.03	-0.00	0.03	0.02
NL	-0.06	0.03	0.18	0.08	-0.09	-0.02	-0.05	0.01	-0.03	0.21	0.10	-0.01	-0.02	0.12	0.01	0.03
Nor		0.01	0.24		-0.05	-0.04	-0.08	0.02	-0.06	0.05		-0.08	-0.10		0.10	-0.00
Por	-0.10	-0.08	-0.11	-0.11	0.01	-0.06	-0.03	-0.06	0.04	-0.10	-0.13	0.37	0.04	-0.13	-0.05	-0.03
Spa	-0.08	-0.07	-0.07	-0.08	-0.07	0.01	-0.04	-0.04	0.05	-0.05	-0.05	0.04	0.41	-0.04	-0.13	-0.01
Swe	0.08	-0.06	0.12	0.08	-0.11	-0.08	-0.08	0.02	-0.08	-0.03	0.15	-0.07	-0.12	0.10	0.07	-0.00
UK	-0.05	-0.02	0.02	-0.03	-0.08	-0.11	-0.01	0.03	0.03	0.04	-0.01	0.01	-0.01	-0.03	0.28	0.00
Total	-0.00	-0.02	0.03	0.00	-0.02	0.00	-0.00	0.01	0.01	-0.01	0.00	0.01	-0.00	0.00	-0.00	-0.00

Table 2
Number of observations by country

The number of analyst-firm-month observations in the sample by the firm headquarter country and the analyst's country of origin. The sample period is 1996-2018.

	Firm country															
Ana. country	Aus	Bel	Den	Fin	Fra	Ger	Gre	Ire	Ita	NL	Nor	Por	Spa	Swe	UK	Total
Aus	5,177	153	257	0	366	3,818	32	0	124	79	17	148	382	35	134	10,722
Bel	93	38,750	199	104	4,925	1,683	129	0	322	7,292	34	32	438	213	654	54,868
Den	0	44	10,150	825	355	844	0	0	198	194	4,640	0	88	2,967	1,293	21,598
Fin	107	19	310	44,164	60	259	40	61	59	11	533	0	0	3,214	367	49,204
Fra	776	7,333	734	1,312	214,680	15,353	267	438	6,005	7,029	798	769	5,614	1,554	17,477	280,139
Ger	10,141	3,549	4,545	3,801	25,567	261,230	237	643	8,116	12,151	2,798	369	4,308	4,162	16,905	358,522
Gre	24	122	0	40	355	796	27,653	0	69	168	0	87	30	12	1,749	31,105
Ire	40	33	78	38	69	253	0	568	0	142	0	25	737	0	1,152	3,135
Ita	517	583	213	1,210	11,564	5,855	439	107	97,703	1,913	325	719	3,436	293	6,110	130,987
NL	159	10,457	386	765	4,222	6,449	25	83	297	69,291	781	37	474	514	3,801	97,741
Nor	0	236	916	0	99	1,305	0	0	51	68	0	0	0	0	490	3,165
Por	0	0	0	0	0	0	38	0	0	0	0	628	66	0	0	732
Spa	0	765	104	73	3,033	1,636	81	49	1,394	535	0	2,852	38,062	104	831	49,519
Swe	17	140	780	8,887	886	2,865	33	134	39	322	2,014	91	15	30,192	1,299	47,714
UK	1,148	1,084	1,658	1,028	6,668	9,569	176	1,434	1,846	3,290	1,020	440	2,234	3,628	107,511	142,734
Total	18,199	63,268	20,330	62,247	272,849	311,915	29,150	3,517	116,223	102,485	12,960	6,197	55,884	46,888	159,773	1,281,885

Table 3
Summary statistics

Summary statistics for the analyst-firm-month observations in the sample. The sample period is 1996-2018. Variables are defined in Appendix A.

	Mean	Std	Min	p10	p50	p90	Max
Recommendations							
Recommendation	3.529	1.151	1.000	2.000	4.000	5.000	5.000
Buy rec.	0.509	0.500	0.000	0.000	1.000	1.000	1.000
Hold rec.	0.322	0.467	0.000	0.000	0.000	1.000	1.000
Sell rec.	0.169	0.375	0.000	0.000	0.000	1.000	1.000
Upgrade	0.025	0.157	0.000	0.000	0.000	0.000	1.000
Downgrade	0.027	0.163	0.000	0.000	0.000	0.000	1.000
Trust bias							
Trust bias	0.218	0.148	-0.175	-0.012	0.246	0.387	0.422
Positive bias	0.889	0.314	0.000	0.000	1.000	1.000	1.000
Trust bias (CEO)	0.164	0.164	-0.181	-0.045	0.209	0.387	0.422
Geography							
Same country	0.738	0.440	0.000	0.000	1.000	1.000	1.000
Same country (CEO)	0.628	0.483	0.000	0.000	1.000	1.000	1.000
Distance ('000 km)	0.300	0.370	0.000	0.000	0.186	0.700	3.054
Share border	0.126	0.331	0.000	0.000	0.000	1.000	1.000
Analyst							
Broker size	45.989	51.873	1.000	8.000	25.000	112.000	373.000
Analyst N firms	11.546	8.311	1.000	4.000	10.000	20.000	93.000
Years covered	3.004	3.231	0.000	0.318	1.910	7.255	25.044
Ana. experience (yrs)	5.838	4.771	0.000	1.036	4.422	12.945	25.060
Anti-globalization	0.441	0.135	0.199	0.299	0.393	0.651	0.729
Firm							
N recommendations	16.343	11.694	1.000	3.000	14.000	33.000	64.000
Eponymous	0.066	0.248	0.000	0.000	0.000	0.000	1.000
Sentiment							
Pessimism	0.127	0.037	0.065	0.080	0.122	0.181	0.216
Consumer confidence (CCI)	-10.556	7.082	-32.500	-20.500	-10.100	-2.000	1.400
N	1,281,885						

Table 4
Recommendations and trust bias

The dependent variable is shown above each column. *Recommendation* is coded from 1 (lowest, "Strong sell") to 5 (highest, "Strong buy"). *Buy recommendation* is a dummy taking the value 1 if the recommendation is 5 ("Strong buy") or 4 ("Buy"). *Sell recommendation* is a dummy taking the value 1 if the recommendation is 1 ("Strong sell") or 2 ("Sell"). Variables are defined in Appendix A. Heteroscedasticity-consistent standard errors, double-clustered by analyst-firm country pair and month, are shown in parentheses.

	Rec. (1-5)		Buy rec.	Sell rec.
	(1)	(2)	(3)	(4)
Trust bias	0.9696***	0.6049***	0.2773***	−0.1229**
	(0.0855)	(0.1482)	(0.0710)	(0.0501)
Same country		0.0987*	0.0490*	−0.0364*
		(0.0553)	(0.0256)	(0.0206)
ln(Distance)		−0.0030	0.0009	0.0020
		(0.0043)	(0.0022)	(0.0016)
Share border		−0.0044	−0.0014	−0.0113
		(0.0298)	(0.0135)	(0.0086)
Firm-Month FE	Yes	Yes	Yes	Yes
Analyst-Month FE	Yes	Yes	Yes	Yes
N	1,043,832	1,037,229	1,037,229	1,037,229
R^2	0.564	0.564	0.546	0.546

Significance levels: * 0.1, ** 0.05, * 0.01.**

Table 5
Trust bias and eponymous firms

The dependent variable is shown above each column. *Recommendation* is coded from 1 (lowest, "Strong sell") to 5 (highest, "Strong buy"). *Buy recommendation* is a dummy taking the value 1 if the recommendation is 5 ("Strong buy") or 4 ("Buy"). *Eponymous* is a dummy taking the value one if the firm name includes the name of its home country. Variables are defined in Appendix A. Heteroscedasticity-consistent standard errors, double-clustered by analyst-firm country pair and month, are shown in parentheses.

	Rec. (1-5)		Buy rec.	
	(1)	(2)	(3)	(4)
Trust bias x Eponymous	0.2933**	0.3066**	0.1042**	0.1115**
	(0.1319)	(0.1344)	(0.0478)	(0.0519)
Trust bias	0.5539***		0.2592***	
	(0.1451)		(0.0710)	
ln(Distance)	−0.0029		0.0010	
	(0.0043)		(0.0022)	
Same country	0.1040*		0.0509**	
	(0.0550)		(0.0257)	
Share border	−0.0034		−0.0010	
	(0.0296)		(0.0135)	
Firm-Month FE	Yes	Yes	Yes	Yes
Analyst-Month FE	Yes	Yes	Yes	Yes
Country-pair FE	No	Yes	No	Yes
N	1,037,229	1,043,832	1,037,229	1,043,832
R^2	0.564	0.566	0.546	0.548

Significance levels: * 0.1, ** 0.05, * 0.01.**

Table 6
Recommendations and trust bias toward CEO country

The dependent variable is shown above each column. *Recommendation* is coded from 1 (lowest, "Strong sell") to 5 (highest, "Strong buy"). The dependent variable is shown above each column. *Buy recommendation* is a dummy taking the value 1 if the recommendation is 5 ("Strong buy") or 4 ("Buy"). Variables are defined in Appendix A. Heteroscedasticity-consistent standard errors, double-clustered by analyst-firm country pair and month, are shown in parentheses.

	Rec. (1-5)		Buy rec.	
	(1)	(2)	(3)	(4)
Trust bias (CEO)	0.2461**	0.2133*	0.1262***	0.1118**
	(0.1185)	(0.1194)	(0.0449)	(0.0451)
Trust bias	0.4131*		0.2178**	
	(0.2176)		(0.1057)	
Same country (CEO)	−0.0592	0.5742	−0.1979	−0.1254
	(0.5053)	(0.8310)	(0.1749)	(0.3760)
Same country	0.1224*		0.0437	
	(0.0676)		(0.0332)	
ln(Distance)	0.0025		0.0021	
	(0.0063)		(0.0037)	
Share border	−0.0092		−0.0037	
	(0.0326)		(0.0153)	
Firm-Month FE	Yes	Yes	Yes	Yes
Analyst-Month FE	Yes	Yes	Yes	Yes
Country-pair FE	No	Yes	No	Yes
N	490,426	493,041	490,426	493,041
R^2	0.610	0.613	0.595	0.598

Significance levels: * 0.1, ** 0.05, * 0.01.**

Table 7
The effect of cultural bias vs. sentiment

The dependent variable is shown above each column. *Recommendation* is coded from 1 (lowest, "Strong sell") to 5 (highest, "Strong buy"). *Buy recommendation* is a dummy taking the value 1 if the recommendation is 5 ("Strong buy") or 4 ("Buy"). *Country-pair controls* include *Same country*, *ln(Distance)*, and *Share border*. Variables are defined in Appendix A. Heteroscedasticity-consistent standard errors, double-clustered by analyst-firm country pair and month, are shown in parentheses.

Panel A: Trust bias vs. pessimism

	Rec. (1-5)			Buy rec.		
	(1)	(2)	(3)	(4)	(5)	(6)
Pessimism x Trust bias	3.1716***	3.5533***	3.0086**	1.0108**	1.2515***	1.2340**
	(0.9330)	(0.9836)	(1.2959)	(0.4046)	(0.4049)	(0.5651)
Trust bias	0.2011			0.1521		
	(0.1977)			(0.0937)		
Country-pair controls	Yes	No	No	Yes	No	No
Firm-Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Analyst-Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Country-pair FE	No	Yes	No	No	Yes	No
Analyst-Firm FE	No	No	Yes	No	No	Yes
N	1,025,919	1,032,336	1,032,125	1,025,919	1,032,336	1,032,125
R^2	0.564	0.565	0.792	0.545	0.548	0.773

Panel B: Trust bias vs. consumer confidence

	Rec. (1-5)			Buy rec.		
	(1)	(2)	(3)	(4)	(5)	(6)
CCI x Trust bias	−0.0150***	−0.0157***	−0.0156**	−0.0042**	−0.0049**	−0.0047
	(0.0045)	(0.0046)	(0.0060)	(0.0020)	(0.0019)	(0.0029)
Trust bias	0.4317***			0.2284***		
	(0.1603)			(0.0770)		
Country-pair controls	Yes	No	No	Yes	No	No
Firm-Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Analyst-Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Country-pair FE	No	Yes	No	No	Yes	No
Analyst-Firm FE	No	No	Yes	No	No	Yes
N	1,037,229	1,043,832	1,043,632	1,037,229	1,043,832	1,043,632
R^2	0.564	0.566	0.793	0.546	0.548	0.774

Significance levels: * 0.1, ** 0.05, * 0.01.**

Table 8
European debt crisis and North-South biases

The dependent variable is shown above each column. *Recommendation* is coded from 1 (lowest, "Strong sell") to 5 (highest, "Strong buy"). *Buy recommendation* is a dummy taking the value 1 if the recommendation is 5 ("Strong buy") or 4 ("Buy"). *Crisis* is a dummy taking the value one during the Eurozone recession of Q4 2011 - Q1 2013. *Northern analyst* is a dummy taking the value one if the analyst is from Germany, UK, Netherlands, Austria, Sweden, Denmark, or Finland. *Southern firm* is a dummy taking the value one if the firm is from Portugal, Italy, Greece, or Spain. *Country-pair controls* include *Same country* (Panel A), *ln(Distance)*, and *Share border*. Variables are defined in Appendix A. The sample period is 2008-2014. Heteroscedasticity-consistent standard errors, double-clustered by analyst-firm country pair and month, are shown in parentheses.

Panel A: Northern analyst and Southern firm

	Rec. (1-5)			Buy rec.		
	(1)	(2)	(3)	(4)	(5)	(6)
Crisis x Northern a. x Southern c.	−0.3531***	−0.4003***	−0.1987*	−0.2095***	−0.2294***	−0.1057*
	(0.1184)	(0.1276)	(0.1142)	(0.0610)	(0.0617)	(0.0548)
Northern a. x Southern c.	0.0633			0.0941**		
	(0.1047)			(0.0376)		
Country-pair controls	Yes	No	No	Yes	No	No
Firm-Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Analyst-Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Country-pair FE	No	Yes	No	No	Yes	No
Analyst-Firm FE	No	No	Yes	No	No	Yes
N	363,847	365,533	365,277	363,847	365,533	365,277
R^2	0.564	0.569	0.793	0.544	0.549	0.774

Panel B: Southern analyst and Northern firm

	Rec. (1-5)			Buy rec.		
	(1)	(2)	(3)	(4)	(5)	(6)
Crisis x Southern a. x Northern c.	−0.1071	−0.1398	−0.1303	−0.0654	−0.0739	−0.0918**
	(0.1015)	(0.1057)	(0.1051)	(0.0496)	(0.0491)	(0.0450)
Southern a. x Northern c.	0.0390			−0.0088		
	(0.0887)			(0.0400)		
Country-pair controls	Yes	No	No	Yes	No	No
Firm-Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Analyst-Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Country-pair FE	No	Yes	No	No	Yes	No
Analyst-Firm FE	No	No	Yes	No	No	Yes
N	363,847	365,533	365,277	363,847	365,533	365,277
R^2	0.564	0.569	0.793	0.544	0.549	0.774

Significance levels: * 0.1, ** 0.05, * 0.01.**

Table 9
Brexit and UK vs. the rest of Europe

The dependent variable is shown above each column. *Recommendation* is coded from 1 (lowest, "Strong sell") to 5 (highest, "Strong buy"). *Buy recommendation* is a dummy taking the value 1 if the recommendation is 5 ("Strong buy") or 4 ("Buy"). *Post* is a dummy taking the value one after March 29, 2017, which is when the UK invoked Article 50, formally beginning the Brexit process. *Country-pair controls* include *ln(Distance)* and *Share border*. Variables are defined in Appendix A. The sample period is 2015-2018. Heteroscedasticity-consistent standard errors, double-clustered by analyst-firm country pair and month, are shown in parentheses.

	Rec. (1-5)			Buy rec.		
	(1)	(2)	(3)	(4)	(5)	(6)
Post x British x Same country	0.6417***	0.6283***	0.3922***	0.3286***	0.3494***	0.1805***
	(0.1536)	(0.1593)	(0.1348)	(0.0646)	(0.0725)	(0.0647)
Post x Same country	−0.0699*	−0.0874**	0.0223	−0.0095	−0.0298*	0.0235
	(0.0352)	(0.0353)	(0.0376)	(0.0175)	(0.0176)	(0.0212)
British x Same country	−0.2324			−0.0734		
	(0.1392)			(0.0762)		
Same country	0.2304***			0.1281***		
	(0.0675)			(0.0320)		
Country-pair controls	Yes	No	No	Yes	No	No
Firm-Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Analyst-Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Country-pair FE	No	Yes	No	No	Yes	No
Analyst-Firm FE	No	No	Yes	No	No	Yes
N	148,343	149,071	148,999	148,343	149,071	148,999
R^2	0.567	0.575	0.830	0.550	0.559	0.816

Significance levels: * 0.1, ** 0.05, * 0.01.**

Table 10
Iraq war and Franco-British cultural biases

The dependent variable is shown above each column. *Recommendation* is coded from 1 (lowest, "Strong sell") to 5 (highest, "Strong buy"). *Buy recommendation* is a dummy taking the value 1 if the recommendation is 5 ("Strong buy") or 4 ("Buy"). *Post* is a dummy taking the value one from March 2003 onward, which is when the US and UK launched an attack on Iraq, strongly opposed by France. *Country-pair controls* include *Same country* (Panel A), *ln(Distance)*, and *Share border*. Variables are defined in Appendix A. The sample period is 2001-2004. Heteroscedasticity-consistent standard errors, double-clustered by analyst-firm country pair and month, are shown in parentheses.

Panel A: French analyst and British firm

	Rec. (1-5)			Buy rec.		
	(1)	(2)	(3)	(4)	(5)	(6)
Post x French a. x British f.	−0.2607**	−0.2385**	−0.3319***	−0.1475***	−0.1415***	−0.1381***
	(0.1211)	(0.1147)	(0.0978)	(0.0439)	(0.0456)	(0.0410)
French a. x British c.	−0.0416			−0.0090		
	(0.1240)			(0.0439)		
Country-pair controls	Yes	No	No	Yes	No	No
Firm-Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Analyst-Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Country-pair FE	No	Yes	No	No	Yes	No
Analyst-Firm FE	No	No	Yes	No	No	Yes
N	205,711	207,376	206,995	205,711	207,376	206,995
R^2	0.554	0.559	0.849	0.538	0.542	0.829

Panel B: British analyst and French firm

	Rec. (1-5)			Buy rec.		
	(1)	(2)	(3)	(4)	(5)	(6)
Post x British a. x French f.	0.1405	0.1561	−0.0105	0.0450	0.0485	−0.0186
	(0.1217)	(0.1224)	(0.1167)	(0.0651)	(0.0658)	(0.0516)
British a. x French c.	−0.0835			0.0471		
	(0.1110)			(0.0519)		
Country-pair controls	Yes	No	No	Yes	No	No
Firm-Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Analyst-Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Country-pair FE	No	Yes	No	No	Yes	No
Analyst-Firm FE	No	No	Yes	No	No	Yes
N	205,711	207,376	206,995	205,711	207,376	206,995
R^2	0.554	0.559	0.849	0.538	0.542	0.829

Significance levels: * 0.1, ** 0.05, * 0.01.**

Table 11
Recommendation announcement returns

The dependent variable in panels B and C is the two-day cumulative abnormal return on days 0 to 1 relative to the recommendation announcement day, winsorized at 1% level. Abnormal returns are estimated based on market model and betas are estimated from daily returns during the trading days (-252, -42) relative to the event date. Heteroscedasticity-consistent standard errors, double-clustered by analyst-firm country pair and month, are shown in parentheses.

Panel A: Summary statistics

	Mean	Std	Min	p10	p50	p90	Max
CAR							
CAR - Buy	0.005	0.035	−0.139	−0.031	0.002	0.045	0.121
CAR - Hold	−0.004	0.036	−0.139	−0.041	−0.003	0.031	0.121
CAR - Sell	−0.008	0.040	−0.139	−0.051	−0.005	0.032	0.121
Trust bias							
Trust bias	0.221	0.148	−0.175	−0.013	0.246	0.387	0.422
Same country	0.750	0.433	0.000	0.000	1.000	1.000	1.000
Distance ('000 km)	0.293	0.366	0.000	0.000	0.179	0.694	3.014
Share border	0.114	0.318	0.000	0.000	0.000	1.000	1.000
N	67,219						

Panel B: Buy recommendations

	Buy		Upgrade to buy	
	(1)	(2)	(3)	(4)
Trust bias	−0.0180**	−0.0204***	−0.0294***	−0.0335***
	(0.0076)	(0.0076)	(0.0100)	(0.0101)
Country-pair controls	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Analyst FE	Yes	Yes	Yes	Yes
Year-Month FE	No	Yes	No	Yes
N	27,394	27,394	18,635	18,635
R^2	0.216	0.237	0.277	0.302

Panel C: Sell recommendations

	Sell		Downgrade to sell	
	(1)	(2)	(3)	(4)
Trust bias	−0.0157	−0.0109	−0.0141	−0.0140
	(0.0147)	(0.0156)	(0.0180)	(0.0197)
Country-pair controls	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Analyst FE	Yes	Yes	Yes	Yes
Year-Month FE	No	Yes	No	Yes
N	11,110	11,110	8,604	8,604
R^2	0.349	0.380	0.393	0.428

Significance levels: * 0.1, ** 0.05, * 0.01.**

Table 12
Attitude toward globalization and the effect of cultural biases

The dependent variable is shown above each column. *Recommendation* is coded from 1 (lowest, "Strong sell") to 5 (highest, "Strong buy"). *Buy recommendation* is a dummy taking the value 1 if the recommendation is 5 ("Strong buy") or 4 ("Buy"). Variables are defined in Appendix A. Heteroscedasticity-consistent standard errors, double-clustered by analyst-firm country pair and month, are shown in parentheses.

	Rec. (1-5)	Buy rec.
	(1)	(2)
Anti-globalization x Trust bias	1.9690***	1.7374***
	(0.7237)	(0.3604)
Trust bias	0.3328	−0.1716
	(0.3849)	(0.1861)
ln(Distance)	0.0064	0.0027
	(0.0072)	(0.0034)
Same country	−0.0430	−0.0170
	(0.0835)	(0.0401)
Share border	0.0014	0.0098
	(0.0426)	(0.0191)
Firm-Month FE	Yes	Yes
Analyst-Month FE	Yes	Yes
N	422,059	422,059
R^2	0.559	0.542

Significance levels: * 0.1, ** 0.05, * 0.01.**

Table 13
Analyst experience and broker size vs. cultural biases

The dependent variable is shown above each column. *Recommendation* is coded from 1 (lowest, "Strong sell") to 5 (highest, "Strong buy"). *Buy recommendation* is a dummy taking the value 1 if the recommendation is 5 ("Strong buy") or 4 ("Buy"). Variables are defined in Appendix A. Heteroscedasticity-consistent standard errors, double-clustered by analyst-firm country pair and month, are shown in parentheses.

	Rec. (1-5)			Buy rec.		
	(1)	(2)	(3)	(4)	(5)	(6)
ln(Time covered) x Trust bias	0.0767***			0.0333***		
	(0.0177)			(0.0061)		
ln(Experience) x Trust bias		0.1263**			0.0733***	
		(0.0559)			(0.0251)	
ln(Broker size) x Trust bias			−0.1532***			−0.0442***
			(0.0443)			(0.0166)
Trust bias	0.1175	−0.3023	1.1847***	0.0657	−0.2490	0.4446***
	(0.2013)	(0.4521)	(0.2570)	(0.0823)	(0.1933)	(0.1012)
Country-pair controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm-Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Analyst-Month FE	Yes	Yes	Yes	Yes	Yes	Yes
N	1,037,229	1,037,229	1,037,229	1,037,229	1,037,229	1,037,229
R^2	0.564	0.564	0.564	0.546	0.546	0.546

Significance levels: * 0.1, ** 0.05, * 0.01.**

Table 14
Robustness check – foreign firms only

The dependent variable is shown above each column. *Recommendation* is coded from 1 (lowest, "Strong sell") to 5 (highest, "Strong buy"). *Buy recommendation* is a dummy taking the value 1 if the recommendation is 5 ("Strong buy") or 4 ("Buy"). Variables are defined in Appendix A. Heteroscedasticity-consistent standard errors, double-clustered by analyst-firm country pair and month, are shown in parentheses.

	Rec. (1-5)		Buy rec.	
	(1)	(2)	(3)	(4)
Trust bias	0.7878**	0.8541**	0.2968**	0.2617*
	(0.3395)	(0.3558)	(0.1407)	(0.1474)
ln(Distance)		0.1218**		0.0440**
		(0.0531)		(0.0212)
Share border		0.0330		0.0295*
		(0.0429)		(0.0173)
Firm-Month FE	Yes	Yes	Yes	Yes
Analyst-Month FE	Yes	Yes	Yes	Yes
N	173,967	173,633	173,967	173,633
R^2	0.682	0.682	0.683	0.684

Significance levels: * 0.1, ** 0.05, * 0.01.**

Internet Appendix: Additional summary statistics

Table IA.1
Trust - Average by country of origin and destination

Country-pair averages of my main bilateral measure of trust. Defined as the proportion of people in the origin country that trust a lot people from the destination country.

	Destination of trust															
Origin of trust	Aus	Bel	Den	Fin	Fra	Ger	Gre	Ire	Ita	NL	Nor	Por	Spa	Swe	UK	Total
Aus	0.652	0.245	0.213	0.244	0.165	0.360	0.146	0.147	0.124	0.233	0.268	0.135	0.142	0.290	0.149	0.234
Bel	0.177	0.402	0.234	0.178	0.226	0.185	0.089	0.151	0.080	0.236	0.191	0.101	0.112	0.202	0.178	0.183
Den	0.341	0.300	0.475	0.340	0.186	0.293	0.134	0.265	0.107	0.399	0.541	0.128	0.124	0.471	0.350	0.297
Fin	0.409	0.288	0.419	0.725	0.227	0.274	0.148	0.247	0.103	0.329	0.552	0.131	0.122	0.473	0.342	0.319
Fra	0.109	0.224	0.179	0.163	0.326	0.155	0.090	0.127	0.071	0.181	0.190	0.106	0.121	0.202	0.093	0.156
Ger	0.315	0.183	0.251	0.218	0.217	0.552	0.109	0.127	0.081	0.240	0.254	0.101	0.131	0.290	0.169	0.216
Gre	0.075	0.168	0.177	0.095	0.250	0.172	0.510	0.156	0.116	0.180	0.087	0.160	0.207	0.133	0.150	0.176
Ire	0.137	0.156	0.183	0.129	0.151	0.182	0.091	0.438	0.108	0.193	0.141	0.099	0.107	0.132	0.184	0.162
Ita	0.110	0.094	0.134	0.156	0.120	0.182	0.067	0.079	0.195	0.143	0.155	0.050	0.105	0.176	0.107	0.125
NL	0.145	0.293	0.355	0.303	0.114	0.150	0.078	0.151	0.042	0.358	0.345	0.094	0.081	0.365	0.214	0.206
Nor		0.307	0.571		0.215	0.265	0.136	0.273	0.119	0.372		0.129	0.127		0.375	0.263
Por	0.052	0.095	0.101	0.056	0.213	0.110	0.058	0.064	0.071	0.110	0.065	0.435	0.132	0.060	0.121	0.116
Spa	0.125	0.162	0.167	0.139	0.134	0.196	0.121	0.134	0.145	0.199	0.191	0.139	0.492	0.197	0.099	0.176
Swe	0.581	0.420	0.627	0.592	0.342	0.407	0.314	0.454	0.282	0.476	0.689	0.330	0.289	0.636	0.532	0.465
UK	0.153	0.169	0.270	0.177	0.080	0.151	0.106	0.150	0.080	0.295	0.224	0.121	0.086	0.200	0.388	0.177
Total	0.241	0.234	0.290	0.251	0.198	0.242	0.146	0.198	0.115	0.263	0.278	0.151	0.159	0.273	0.230	0.217

Table IA.2
Mean recommendation (1-5) by country

	Firm country															
Ana. country	Aus	Bel	Den	Fin	Fra	Ger	Gre	Ire	Ita	NL	Nor	Por	Spa	Swe	UK	Total
Aus	3.576	3.078	3.401		3.230	3.375	4.125		3.202	3.544	1.000	3.649	2.942	3.571	3.037	3.446
Bel	4.151	3.543	3.111	3.375	3.185	3.380	3.884		3.643	3.614	3.912	1.281	2.966	3.300	3.107	3.504
Den		2.909	3.433	3.549	4.006	3.419			3.354	3.314	3.799		2.739	3.354	3.578	3.517
Fin	3.458	5.000	3.594	3.282	3.267	4.023	2.500	4.000	3.000	2.818	3.180			3.401	3.104	3.294
Fra	3.325	3.362	3.319	3.184	3.571	3.322	3.543	3.171	3.385	3.442	3.407	3.337	3.222	3.389	3.567	3.532
Ger	3.695	3.564	3.173	3.269	3.434	3.624	3.489	3.255	3.275	3.405	3.667	3.469	3.316	3.219	3.575	3.575
Gre	4.000	3.631		2.900	3.642	3.427	3.600		3.928	3.071		3.391	2.967	2.750	3.389	3.580
Ire	3.050	3.848	3.423	4.737	2.884	3.929		4.025		2.972		3.760	3.237		3.746	3.634
Ita	2.992	3.350	3.085	3.352	3.534	3.664	3.383	3.925	3.558	3.381	3.554	3.531	3.431	3.375	3.586	3.549
NL	3.377	3.424	3.311	3.620	3.311	3.637	3.200	3.976	3.182	3.464	3.732	4.000	3.435	2.864	3.328	3.458
Nor		3.737	3.799		3.626	3.530			3.804	4.000					3.814	3.685
Por							4.316					3.674	3.833			3.721
Spa		3.735	3.769	4.479	3.512	3.438	3.852	3.776	3.482	3.114		3.387	3.343	2.923	3.390	3.370
Swe	3.412	3.807	3.246	3.253	3.345	3.551	2.000	3.970	2.333	3.609	3.474	3.253	3.933	3.532	3.552	3.471
UK	3.047	3.188	3.136	3.146	3.311	3.426	3.301	3.762	3.326	3.515	3.289	3.727	3.174	2.956	3.680	3.590
Total	3.581	3.499	3.350	3.284	3.538	3.597	3.593	3.660	3.523	3.464	3.617	3.454	3.320	3.424	3.635	3.529

Table IA.3
Proportion of buy recommendations by country

	Firm country															
Ana. country	Aus	Bel	Den	Fin	Fra	Ger	Gre	Ire	Ita	NL	Nor	Por	Spa	Swe	UK	Total
Aus	0.426	0.373	0.471		0.240	0.403	0.563		0.331	0.354	0.000	0.520	0.217	0.571	0.231	0.402
Bel	0.839	0.477	0.296	0.385	0.383	0.469	0.620		0.571	0.525	0.647	0.000	0.381	0.366	0.390	0.473
Den		0.091	0.556	0.582	0.823	0.596			0.470	0.613	0.644		0.284	0.443	0.594	0.567
Fin	0.458	1.000	0.545	0.519	0.433	0.687	0.000	1.000	0.339	0.000	0.535			0.523	0.281	0.518
Fra	0.500	0.419	0.451	0.368	0.567	0.449	0.554	0.434	0.485	0.507	0.409	0.420	0.442	0.459	0.531	0.545
Ger	0.537	0.555	0.379	0.390	0.453	0.518	0.570	0.356	0.351	0.438	0.582	0.504	0.364	0.375	0.474	0.499
Gre	1.000	0.582		0.375	0.617	0.443	0.556		0.696	0.190		0.391	0.367	0.083	0.431	0.545
Ire	0.200	0.515	0.641	0.868	0.130	0.617		0.838		0.162		0.760	0.459		0.571	0.570
Ita	0.259	0.369	0.188	0.498	0.511	0.547	0.547	0.757	0.486	0.491	0.342	0.446	0.454	0.553	0.545	0.491
NL	0.384	0.408	0.360	0.562	0.394	0.520	0.600	0.675	0.414	0.439	0.675	1.000	0.418	0.265	0.415	0.440
Nor		0.610	0.634		0.525	0.602			0.588	1.000					0.678	0.629
Por							0.658					0.611	0.576			0.611
Spa		0.610	0.596	1.000	0.559	0.531	0.494	0.776	0.539	0.492		0.472	0.497	0.154	0.491	0.504
Swe	0.529	0.807	0.406	0.443	0.503	0.462	0.000	0.970	0.000	0.587	0.521	0.253	0.467	0.515	0.536	0.498
UK	0.309	0.399	0.388	0.336	0.453	0.473	0.267	0.621	0.424	0.496	0.387	0.602	0.361	0.285	0.555	0.525
Total	0.481	0.463	0.486	0.495	0.544	0.512	0.554	0.612	0.476	0.453	0.566	0.487	0.469	0.475	0.538	0.509

Table IA.4
Proportion of sell recommendations by country

	Firm country															
Ana. country	Aus	Bel	Den	Fin	Fra	Ger	Gre	Ire	Ita	NL	Nor	Por	Spa	Swe	UK	Total
Aus	0.096	0.294	0.035		0.096	0.195	0.000		0.210	0.063	1.000	0.189	0.301	0.000	0.194	0.144
Bel	0.000	0.113	0.302	0.260	0.227	0.270	0.000		0.298	0.092	0.176	0.969	0.345	0.066	0.298	0.131
Den		0.136	0.309	0.279	0.107	0.306			0.106	0.335	0.076		0.568	0.217	0.172	0.233
Fin	0.000	0.000	0.187	0.334	0.167	0.000	0.500	0.000	0.339	0.182	0.304			0.256	0.193	0.323
Fra	0.268	0.145	0.218	0.274	0.186	0.200	0.109	0.313	0.199	0.206	0.153	0.234	0.313	0.243	0.178	0.189
Ger	0.100	0.134	0.237	0.227	0.168	0.153	0.219	0.196	0.181	0.164	0.098	0.154	0.191	0.257	0.121	0.155
Gre	0.000	0.082		0.300	0.237	0.111	0.104		0.000	0.137		0.000	0.200	0.333	0.229	0.113
Ire	0.150	0.000	0.218	0.000	0.333	0.000		0.069		0.190		0.000	0.122		0.098	0.100
Ita	0.308	0.165	0.202	0.274	0.159	0.092	0.207	0.093	0.123	0.213	0.006	0.099	0.225	0.195	0.139	0.132
NL	0.088	0.142	0.174	0.165	0.206	0.163	0.400	0.000	0.347	0.162	0.063	0.000	0.143	0.339	0.210	0.164
Nor		0.148	0.114		0.222	0.085			0.098	0.000					0.133	0.108
Por							0.000					0.113	0.091			0.105
Spa		0.108	0.000	0.000	0.178	0.287	0.000	0.000	0.202	0.434		0.231	0.279	0.288	0.235	0.265
Swe	0.059	0.000	0.264	0.249	0.183	0.082	1.000	0.000	0.333	0.171	0.191	0.000	0.000	0.181	0.101	0.186
UK	0.286	0.235	0.264	0.207	0.192	0.148	0.063	0.022	0.165	0.140	0.170	0.145	0.295	0.301	0.110	0.130
Total	0.122	0.125	0.264	0.307	0.184	0.155	0.107	0.098	0.134	0.162	0.119	0.187	0.271	0.208	0.125	0.169

Table IA.5
Number of observations by country

The number of analyst-firm-month observations in the sample by the CEO's and the analyst's country of origin. The sample period is 1996-2018.

	CEO country																
Ana. country	Aus	Bel	Den	Fin	Fra	Ger	Gre	Ire	Ita	NL	Nor	Por	Spa	Swe	UK	Undefined	Total
Aus	2,014	59	25	15	267	1,416	16	42	169	29	59	115	297	20	521	1,166	6,230
Bel	120	12,227	243	33	4,797	638	50	18	1,078	3,324	661	80	695	306	3,524	3,023	30,817
Den	50	72	2,590	178	568	533	0	79	69	379	2,099	0	43	1,272	935	1,290	10,157
Fin	32	27	371	14,154	62	343	20	101	149	488	384	0	0	2,205	294	2,620	21,250
Fra	1,290	3,639	508	144	78,364	9,124	197	1,460	11,567	3,259	1,550	453	4,200	3,065	23,426	20,750	162,996
Ger	9,437	2,322	2,052	938	17,553	95,516	759	1,684	7,513	5,839	3,002	445	3,701	4,825	24,198	37,827	217,611
Gre	24	52	0	0	509	158	10,681	0	567	85	28	33	19	0	1,951	2,485	16,592
Ire	62	0	17	33	85	96	0	334	1	89	43	16	224	0	544	277	1,821
Ita	616	1,090	260	656	7,420	3,743	144	705	36,860	1,169	342	75	2,510	662	11,862	13,500	81,614
NL	144	5,745	396	316	4,097	2,900	25	127	879	20,804	711	35	625	1,092	5,549	7,720	51,165
Nor	23	37	459	0	126	674	0	23	28	44	170	0	0	22	345	331	2,282
Por	0	0	0	0	0	22	0	0	0	0	0	143	7	0	31	43	246
Spa	101	396	86	17	2,050	524	0	132	2,121	731	173	481	14,164	273	3,603	8,575	33,427
Swe	240	99	549	2,703	818	1,545	41	85	83	375	1,238	0	11	9,063	1,071	1,890	19,811
UK	1,106	736	876	308	4,820	4,545	138	1,875	2,631	2,071	827	515	1,891	1,776	52,462	15,242	91,819
Total	15,259	26,501	8,432	19,495	121,536	121,777	12,071	6,665	63,715	38,686	11,287	2,391	28,387	24,581	130,316	116,739	747,838

Table IA.6
Number of observations by country

The number of analyst-firm-month observations in the sample by the firm headquarter country and the CEO's country of origin. The sample period is 1996-2018.

	CEO country																
Firm country	Aus	Bel	Den	Fin	Fra	Ger	Gre	Ire	Ita	NL	Nor	Por	Spa	Swe	UK	Undefined	Total
Aus	6,701	0	0	0	87	1,304	0	75	192	114	173	402	240	0	900	1,388	11,576
Bel	0	20,156	98	0	4,345	305	0	0	1,054	2,092	838	48	461	180	4,166	2,344	36,087
Den	0	16	5,983	5	62	211	0	0	0	576	542	0	20	342	113	890	8,760
Fin	0	20	137	18,939	0	27	0	6	126	847	13	0	0	1,562	27	3,239	24,943
Fra	390	1,682	27	0	101,684	3,252	28	962	8,579	597	756	204	2,979	2,529	18,214	18,751	160,634
Ger	7,760	1,138	885	187	5,873	111,684	567	1,414	987	2,342	1,550	17	1,369	4,405	13,555	34,539	188,272
Gre	0	0	0	0	321	0	11,261	0	598	0	0	0	0	0	910	2,654	15,744
Ire	0	0	0	0	0	184	0	1,722	206	0	0	0	16	0	292	411	2,831
Ita	164	648	29	0	3,073	910	56	520	48,378	207	135	0	655	101	8,364	10,791	74,031
NL	41	2,011	560	246	1,955	1,141	0	0	861	29,777	530	16	0	694	4,740	9,274	51,846
Nor	6	42	220	0	59	76	8	32	11	43	5,804	0	0	58	814	538	7,711
Por	0	0	0	0	0	0	0	0	82	0	48	980	72	0	504	723	2,409
Spa	19	298	0	0	596	290	0	206	1,445	543	150	425	20,681	137	5,040	10,556	40,386
Swe	18	91	414	118	365	1,198	0	0	4	0	306	0	0	13,680	801	1,380	18,375
UK	160	399	79	0	3,116	1,195	151	1,728	1,192	1,548	442	299	1,894	893	71,876	19,261	104,233
Total	15,259	26,501	8,432	19,495	121,536	121,777	12,071	6,665	63,715	38,686	11,287	2,391	28,387	24,581	130,316	116,739	747,838

Table IA.7
Number of observations by fiscal year and company country

	Firm country															
Year	Aus	Bel	Den	Fin	Fra	Ger	Gre	Ire	Ita	NL	Nor	Por	Spa	Swe	UK	Total
1996	554	1,595	519	470	9,847	1,719	176	6	1,546	1,715	218	9	746	792	2,391	22,303
1997	460	2,622	874	812	12,121	4,307	305	30	1,792	2,621	293	160	968	1,150	4,206	32,721
1998	121	2,600	937	1,130	13,255	6,956	254	35	2,188	3,890	384	335	968	1,512	6,013	40,578
1999	176	2,436	990	1,463	14,664	7,887	415	36	2,932	4,898	411	370	1,234	1,102	6,101	45,115
2000	331	2,410	1,000	2,160	13,867	10,197	576	84	3,710	4,851	357	332	1,634	814	6,190	48,513
2001	313	3,061	766	1,503	13,445	12,363	1,449	90	3,588	6,354	205	312	2,482	857	5,837	52,625
2002	606	3,173	731	2,739	13,178	16,050	2,182	83	4,120	7,082	343	306	2,723	1,554	7,090	61,960
2003	743	3,143	724	2,588	15,868	16,139	1,704	75	6,813	7,895	422	344	2,979	1,652	7,766	68,855
2004	630	2,838	939	2,871	14,357	14,558	1,437	102	6,363	6,849	372	312	2,629	2,012	7,866	64,135
2005	639	3,096	1,265	3,610	13,073	14,302	1,778	136	6,621	5,986	531	408	2,596	2,339	8,637	65,017
2006	648	3,323	1,212	4,324	13,117	16,078	2,460	159	7,399	5,422	708	417	2,676	2,524	9,695	70,162
2007	774	3,496	1,306	4,283	14,251	17,356	2,455	197	8,014	5,322	881	353	2,619	3,174	9,752	74,233
2008	1,202	3,660	1,416	3,792	12,836	18,958	2,187	124	8,761	4,629	796	268	3,078	3,656	10,127	75,490
2009	1,327	3,522	993	3,203	12,872	18,723	2,137	170	8,232	4,536	701	301	3,275	3,379	9,776	73,147
2010	1,167	3,342	697	3,814	11,653	17,052	1,920	222	6,949	4,428	733	281	3,406	3,294	9,349	68,307
2011	1,118	3,318	823	3,994	11,098	16,495	1,496	212	6,771	4,206	795	283	3,300	2,451	8,695	65,055
2012	960	3,008	792	3,448	10,450	15,705	989	230	5,582	3,750	773	296	2,943	2,239	7,267	58,432
2013	980	2,898	742	3,067	9,129	15,508	702	227	4,281	3,440	836	271	2,834	2,215	6,155	53,285
2014	1,094	2,263	694	2,757	8,307	14,792	813	193	3,933	3,107	786	232	2,618	1,877	5,675	49,141
2015	1,110	2,381	756	2,701	8,903	14,799	911	195	4,113	3,134	629	171	2,546	2,074	5,360	49,783
2016	1,178	1,914	733	2,786	8,878	14,761	1,016	281	4,159	3,098	619	141	2,749	2,185	5,445	49,943
2017	1,132	1,612	755	2,535	9,039	13,727	992	305	4,177	2,871	621	147	2,633	2,207	5,308	48,061
2018	936	1,557	666	2,197	8,641	13,483	796	325	4,179	2,401	546	148	2,248	1,829	5,072	45,024
Total	18,199	63,268	20,330	62,247	272,849	311,915	29,150	3,517	116,223	102,485	12,960	6,197	55,884	46,888	159,773	1,281,885

Table IA.8
Number of observations by fiscal year and analyst country

	Analyst country															
Year	Aus	Bel	Den	Fin	Fra	Ger	Gre	Ire	Ita	NL	Nor	Por	Spa	Swe	UK	Total
1996	369	1,543	574	499	9,452	2,852	327	0	1,433	1,440	16	8	595	667	2,528	22,303
1997	144	2,403	616	720	11,406	6,042	564	6	1,947	2,340	136	51	798	1,134	4,414	32,721
1998	59	2,578	686	815	12,705	8,723	407	53	2,412	3,429	19	62	940	1,718	5,972	40,578
1999	195	2,412	703	1,047	13,920	9,948	456	111	3,281	4,326	19	59	1,291	1,386	5,961	45,115
2000	389	2,383	776	1,657	13,365	12,523	552	243	4,039	4,340	73	29	1,429	1,127	5,588	48,513
2001	432	3,062	437	1,028	13,617	14,402	1,429	286	3,728	5,508	29	12	2,075	999	5,581	52,625
2002	601	3,279	572	2,139	13,948	18,586	2,268	232	3,935	5,711	18	0	2,094	1,578	6,999	61,960
2003	542	3,631	602	2,038	16,649	19,187	1,869	113	6,379	6,485	36	0	2,453	1,464	7,407	68,855
2004	423	3,121	865	2,246	15,147	17,635	1,570	52	5,951	5,861	36	0	2,380	1,987	6,861	64,135
2005	501	2,582	1,394	2,898	13,740	17,225	1,866	114	6,531	5,588	31	107	2,659	2,595	7,186	65,017
2006	599	2,809	1,527	3,334	13,344	18,829	2,552	251	7,774	5,146	68	137	2,623	3,077	8,092	70,162
2007	697	3,074	1,613	3,276	14,448	19,746	2,515	299	8,678	5,190	69	124	2,563	3,725	8,216	74,233
2008	864	3,014	1,736	2,863	13,444	20,931	2,143	217	9,642	4,797	151	43	2,846	3,945	8,854	75,490
2009	941	2,941	1,378	2,581	13,302	20,469	2,198	164	9,576	4,892	246	47	2,959	3,184	8,269	73,147
2010	783	2,401	1,019	2,939	12,276	18,597	2,031	143	8,768	4,822	350	0	3,032	3,030	8,116	68,307
2011	626	2,455	921	3,035	11,860	18,156	1,751	107	8,215	4,696	355	8	2,922	2,373	7,575	65,055
2012	399	2,352	928	2,752	11,151	17,301	1,097	96	6,704	4,536	258	0	2,657	1,993	6,208	58,432
2013	417	2,097	867	2,491	9,809	17,007	743	100	5,450	3,942	246	0	2,612	2,105	5,399	53,285
2014	476	1,640	820	2,458	8,630	16,498	824	74	5,268	3,072	222	0	2,273	1,780	5,106	49,141
2015	455	1,634	903	2,428	9,173	16,503	937	98	5,534	3,155	206	6	2,178	1,879	4,694	49,783
2016	355	1,274	943	2,436	9,351	16,668	1,075	103	5,402	3,276	168	5	2,232	1,931	4,724	49,943
2017	272	1,108	950	1,953	9,937	15,488	1,056	140	5,245	2,794	195	14	2,145	2,176	4,588	48,061
2018	183	1,075	768	1,571	9,465	15,206	875	133	5,095	2,395	218	20	1,763	1,861	4,396	45,024
Total	10,722	54,868	21,598	49,204	280,139	358,522	31,105	3,135	130,987	97,741	3,165	732	49,519	47,714	142,734	1,281,885