Internet Appendix for "Is Sell-Side Research More Valuable in Bad Times?"*

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* Citation format: Loh, Roger K., and René M. Stulz, Internet Appendix for "Is Sell-Side Research More Valuable in Bad Times?" *Journal of Finance* [https://doi.org/10.1111/jofi.12611]. Please note: Wiley-Blackwell is not responsible for the content or functionality of any additional information provided by the authors. Any queries (other than missing material) should be directed to the authors of the article.

This Internet Appendix contains additional results and tests for the paper "Is Sell-Side Research More Valuable in Bad Times?" Section I contain additional tables supporting the main result that the stock-price impact of analysts is greater in bad times. Section II contains results that supplement the robustness tests in the paper. Section III reports results that relate to our hypotheses describing why analysts might have more of an impact in bad times.

I. Additional Evidence Supporting the Main Results

A. Excluding the Credit Crisis

Our main results that analysts' recommendation changes have more of an impact in bad times are based on four bad times measures. The first two focus on prominent financial crises: *Crisis* equals one for the periods September to November 1987 (1987 crisis), August to December 1998 (LTCM crisis), and July 2007 to March 2009 (credit crisis), and *Credit Crisis* equals one for the credit crisis period, since this especially sharp and prolonged crisis warrants separate investigation. Our third proxy for bad times, *Recession*, equals one for NBER-defined recessions, specifically July 1990 to March 1991, March to November 2001, and December 2007 to June 2009. Our fourth proxy for bad times is the Baker, Bloom, and Davis (2016) policy uncertainty index, *High Uncertainty* which equals one when the U.S. historical index is in the top tercile of available values (August 1983 to February 2014).

Because the credit crisis is a prolonged period of bad times, it has a large overlap with two of our other bad times measures. Specifically, 72% and 43% of the *Crisis* and *Recession* months, respectively, occur during the credit crisis. As a result, when we exclude the credit crisis months from our sample, we find only mixed evidence that analysts have more of an impact in *Crisis* or *Recession* periods. However, this issue is mitigated for the *High Uncertainty* measure of bad times as only 12% of *High Uncertainty* months occur during the credit crisis. Using the *High Uncertainty* measure of bad times, we see in Table IAI that excluding credit crisis observations does not affect our result of a greater analyst impact in bad times.

B. Separating Non-Bad Times into Normal Times and Good Times

Using a bad times dummy means that the baseline group is non-bad times, which we refer to as good times. This approach is consistent with, say, how the NBER defines recessions and labels other periods as expansions. In Table IAII we use monthly market returns to sort non-bad times into two groups, normal times and good times. Using normal times as the baseline group, we continue to find strong evidence that recommendation changes have a greater CAR impact in bad times. We find little increased CAR impact in good times compared to normal times, except for upgrades, which have a slightly larger impact in good times compared to normal times.

C. Forecast Revision CAR Impact

Figure IA1 (left two charts) plots the univariate average earnings forecast revision two-day (trading day 0 to day 1) CARs. We use a sample of I/B/E/S Detail earnings forecasts from 1983 to 2014. Note that we remove forecast revisions on dates that coincide with corporate events (in particular, the three trading days around earnings announcements and guidance dates, and multiple-forecast dates) so that we do not incorrectly give credit to the analyst for stock-price changes driven by company announcements. We see clear evidence in this figure that both upward and downward forecast revisions have more of a stock-price impact in bad times.

We next estimate regressions of forecast revision CARs with control variables. An important added control is *Forecast Revision* itself because larger-magnitude revisions are likely to be associated with larger stock-price changes. We define *Forecast Revision* using the analyst's own prior quarterly earnings forecast (provided that the prior forecast has not been stopped and is still active, that is, is less than one year old, using its I/B/E/S review date) and then scale by the lagged CRSP stock price. Table IAIII reports the regressions of forecast revision CARs where the standard errors are clustered by calendar day. In regression (1) which does not include control variables, we see that the downward forecast revision CAR is much more negative in *Crisis* periods. The intercept is -0.294% while the coefficient on the indicator variable is -0.398% (t=6.50), which implies that the stock-price reaction to a downward revision during bad times is more than double the reaction during good times. Adding the control variables to the regression does not meaningfully change the statistical or economic

effect of bad times (in model (2), the bad times coefficient is -0.384 compared to the good times predicted CAR of -0.230). While the coefficient on *Forecast Revision* itself is positive and significant, it does not remove the significance of the *Crisis* dummy. This means that larger-magnitude revisions in bad times cannot explain the greater CAR impact of revisions in *Crisis* periods. Similar results hold using our other measures of bad times. When we turn to upward revisions, the CAR is significantly higher for the *Crisis* and *Credit Crisis* measures of bad times, but not for other measures. Further, the impact of bad times on CAR is smaller. Using the *Crisis* measure, the intercept is 0.439% and the coefficient on the indicator variable is 0.198%, or about one-third higher than in bad times, which contrasts with an impact for downward revisions that is more than double in bad times.

In Figure IA1 (right two charts), we also show whether earnings forecast revisions are more likely to be influential in bad times. Recall that *Influential* is an indicator variable that equals one when the forecast is deemed to be influential according to the definition in Loh and Stulz (2011).[1] The results unequivocally show that analyst forecast revisions are more influential in bad times. The multivariate results of the influential likelihood probits are reported in the main article.

Based on these results, we conclude that analyst output is indeed more valuable in bad times. Whether we consider analysts' recommendation changes, which represent their overall assessment of a firm's prospects, or a specific change in their forecasts of a firm's upcoming short-term fundamentals (quarterly earnings), we find that analysts have a more influential impact on stock prices in bad times.

II. Additional Robustness Test Results

A. Separating Bad Times into Market, Industry, and Firm-Specific Bad Times, Alternative Specifications

Our measures of bad times are based on changes in aggregate economic activity. We use a market-wide definition instead of a firm-specific definition because market-wide bad times are more likely to be exogenous

[1] Specifically, we check if the CAR is in the same direction as the revision and the absolute value of CAR exceeds $1.96 \times \sqrt{2} \times \sigma_{\varepsilon}$. We multiply by $\sqrt{2}$ since the CAR is a two-day CAR. σ_{ε} is the standard deviation of residuals from a daily time-series regression of past three-month (days −69 to −6) firm returns against the Fama and French (1993) three factors. This measure roughly captures revisions that are associated with noticeable abnormal returns that can be attributed to the revisions.

to the analyst and the industry. Kacperczyk, Van Nieuwerburgh, and Veldkamp (2016), for example, show that in recessions, an average stock's aggregate risk increases substantially but the change in idiosyncratic risk is not statistically different from zero. This means that bad times likely introduces an exogenous change in uncertainty in the average firm. Some studies how firm-level uncertainty affects analysts' output (for example, Frankel, Kothari, and Weber (2006) and Loh and Stulz (2011)). Although our earlier results already control for firm-specific uncertainty, we explore a different method here.

We first decompose the total variance of a firm's stock returns over the prior month into macro, industry (Fama and French (1997) 30-industry groups), and residual (firm-specific) components by regressing a firm's daily returns on market (CRSP value-weighted) returns and market-purged industry returns. In the paper, we define high uncertainty as the highest tercile of the relevant variance component over the firm's history, and we find that all three high uncertainty measures are related to a larger analyst CAR impact when the high uncertainty measures enter the regressions on their own. When we include all three uncertainty dummies together and add the control variables (we don't include firm controls since they might be highly correlated with firm-level uncertainty), we see that only the coefficient on the market-wide uncertainty dummy remains robust and statistically significant across all specifications, particularly for downgrades. Hence, we believe our results are new in that it is market-wide uncertainty rather than firm-specific uncertainty that drives the higher impact of analysts during periods of high uncertainty.

In Table IAIV, we use alternative methods to define high uncertainty. Panel A uses the highest quintile instead of tercile as the criterion for the high uncertainty dummies to be equal to one. Panel B uses cross-sectional sorts instead of time-series sorts to define high uncertainty. As can be seen, these alternative approaches do not affect our results.

B. Reiteration and Recommendation Change Frequency

We examine the frequency of recommendation changes and reiterations in bad times. It is well known that I/B/E/S does not record all reiterations (see for example, Brav and Lehavy (2003)). We infer reiterations other than those recorded on I/B/E/S by assuming that the most recent outstanding I/B/E/S rating is reiterated

whenever there is a quarterly forecast in the I/B/E/S Detail file or a price target forecast in the I/B/E/S price target file but no corresponding new rating in the recommendation file. As before, we remove observations that occur together with firm news. We find in Table IAV that in non-*Crisis* periods, the average number of recommendation changes per month for a firm (across all analysts covering it) is 0.183. In *Crisis* times, this figure rises to 0.238 (a 30% increase). We similarly find that the number of recommendation changes goes up in bad times using our other measures of bad times. Hence, we find no evidence that analysts are more reluctant to revise recommendations in bad times. For reiterations, we find 0.771 reiterations per month in non-*Crisis* periods and 0.903 in *Crisis* periods (a 17% increase). The finding that the number of reiterations goes up also holds using our other measures of bad times. There is no evidence that the number of reiterations goes up at the expense of the number of revisions as the number of recommendations increases with the number of reiterations. Rather, the evidence is simply that analysts act more often.

C. Analyst and Broker Fixed Effects

Differences in analyst characteristics could spuriously explain our results if analysts perform better on average in bad times than in good times. Controlling for analyst characteristics addresses the concern that the overall quality of the pool of analysts is different in bad times. While it seems unlikely that the change in the analyst pool would be large enough to explain our findings, which already control for analyst characteristics, we nonetheless conduct two additional tests. First, we repeat our tests above on the subsample of analysts who are present before and after the longest bad times period we consider, namely, the credit crisis. These analysts, who appear in I/B/E/S before 2007 and continue to issue reports after March 2009, are responsible for almost half of the recommendations in our sample. These tests allow us to ascertain the performance differential between good and bad times for an identifiable set of seasoned analysts. Second, we augment the tests on this subsample with analyst fixed effects. Under this approach, the increased impact of analyst recommendations and forecasts during the credit crisis cannot be explained by a selection effect or unobserved analyst characteristics. In Panels A and B of Table IAVI, we find that the influential probability of recommendation changes continues to be higher in bad times compared to good times when analyst fixed effects are added, and in many cases the results

are stronger. For example, in the model with the control variables, the marginal effect of a *Crisis* period on the probability of a downgrade being influential is 0.059 without the fixed effects. After adding analyst fixed effects, the marginal effect becomes 0.067. For upgrades, the increased probability of the recommendation change being influential in a *Crisis* period is 0.043 without the fixed effects and this is unchanged when analyst fixed effects are added. In another test reported in Panels C and D on this sample of crisis-seasoned analysts, we employ broker fixed effects with little impact to our earlier conclusions.

D. Analysts who Start their Careers in Bad Times

In another set of tests, we control for whether an analyst's career starts during bad times. Analysts who begin their careers during bad times may have more experience with such times and hence might do better in such periods. Alternatively, brokers may hire analysts with special expertise when bad times strike. To account for such possibilities, we construct a dummy variable that is equal to one for analysts who began their careers in any of the bad times periods. We also consider another dummy variable that is equal to one for analysts who began their careers during the credit crisis. When we add these dummy variables to our main regressions, we find in Table IAVII that their coefficients are mostly statistically insignificant and all of our main results are unaffected. We conclude that analysts who join brokerages during bad times are unlikely to be driving our finding that analysts produce better research in bad times.

E. Financial Firms

We exclude financial firms from our main analysis because many of the macro bad times periods that we consider started in the financial sector, for example, the credit crisis and most of the recessions. Thus, for the financial sector, the periods that we define as macro bad times are often also industry bad times. Industry bad times might also not be as exogenous to analysts as macro bad times are. For robustness, however, we repeat our analysis on financial firms (group 29 of the Fama and French (1997) 30-industry classification). We find in Table IAVIII that recommendation changes made on financial firms also have significantly greater CAR impact in bad times. For example, the mean recommendation downgrade CAR in non-*Crisis* periods is -1.087% while

in bad times it elicits an additional -2.118% abnormal return. For upgrades, the non-*Crisis* CAR is 1.315% but the *Crisis* CAR is 1.473% larger. The results are similarly strong using our other measures of bad times and after adding the controls. For the CAR impact of earnings forecast revisions, the coefficients on the bad times dummies are mostly insignificant as reported in Table IAIX. Hence, while our recommendation change results are robust to firms in the financial industry, the results for forecast revisions are weaker. Importantly, for this set of firms it is hard to distinguish whether the results are triggered by industry or macro bad times.

F. Absolute Forecast Errors Scaled by Implied Volatility Instead of Recent Observed Volatility

The paper shows that analyst absolute forecast errors per unit of uncertainty actually decrease in bad times, which helps explain why the market reacts more strongly to analyst forecast revisions in bad times. The main measure of uncertainty in the paper is the prior volatility of daily stock returns the month before the earnings forecast revision. In Panel A of Table IAX, we use an alternative measure of uncertainty, namely the implied volatility five trading days before the forecast revision. The implied volatility data come from Option Metrics' Volatility Surface file, which are only available for the subset of firms that have data on this database and for the 1996 to 2014 period. We use the average of the interpolated implied volatility from puts and calls with 30 days to expiration and a delta of 50. The results show that for three of the four bad times measures, absolute forecast error per unit of uncertainty indeed does decrease in bad times.

We also show in Panel B the effect of not scaling absolute forecast errors. Without scaling, absolute forecast errors are larger in bad times. This is similar to our finding in the paper that the typical measures of absolute forecast error—whether it is unscaled, scaled by price, or scaled by the absolute value of actual earnings—go up in bad times. But once we account for the increase in underlying uncertainty by scaling with some measure of uncertainty, we find that the absolute forecast error per unit of uncertainty actually goes down in bad times, consistent with analysts providing better forecasts in bad times.

III. Additional Results on Why Analysts Have More Impact in Bad Times

A. Additional Cross-Sectional Tests with Analyst and Broker Characteristics

In Table IAXI, we report results of recommendation change CAR impact regressions with analyst characteristic interactions included. We examine six analyst characteristics. In Panel A, we add *BigBroker*, a dummy variable that equals one for brokers in the top quintile based on analysts issuing ratings in the prior quarter. In Panel B, we include *StarAnalyst*, which equals one if the analyst is an All-American in the most recent *Institutional Investor* polls. In Panel C, *HighExperience* equals one for the top quintile based on the number of quarters in I/B/E/S. In Panel D, *HighPriorInflu* equals one if the analyst is in the highest quintile based on the fraction of influential recommendation changes in the prior year. In Panel E, *Underwriter* equals one if the broker does not state explicitly online that it is an independent broker with no underwriting business. And in Panel F, *HighAnaComp* equals one when the industry's prior-quarter number of analysts divided by the industry's market cap is in the highest quintile. These estimations include all of the control variables described in Table IAI (but coefficients are not reported) unless the control variable is likely to be collinear with the analyst characteristic (e.g., the control variable *Relative Experience* is excluded when we examine the *HighExperience* interactions).

We see little evidence that the *BigBroker*, *StarAnalyst*, and *HighExperience* variables increase the impact of analysts in bad times. While *BigBroker* and *StarAnalyst* are associated with larger stock-price reactions to recommendation changes in good times, they have no additional increased impact in bad times, and *HighExperience* appears less related to recommendation change impact than the other two analyst characteristics. There is some evidence that *HighPriorInflu* is associated with a greater impact of analysts in bad times for the credit crisis and recession measures of bad times.

In Panel E, we examine whether analysts associated with underwriters have greater influence in bad times and find that this is the case for about half of the specifications. Interestingly, in good times however, the recommendation changes of brokers with underwriting business also have greater impact, which implies that

analysts in these brokerages have access to more resources. Hence, we find no support for the conflicts of interest hypothesis, which predicts that analysts associated with underwriters should have more of an impact during bad times but less impact during good times when pressure to write biased research is stronger.

In Panel F, we find strong evidence that more analyst competition as proxied by *HighAnaComp* is associated with a greater impact in bad times for downgrades but not upgrades. That analyst competition is important for analyst influence is consistent with Hong and Kacperczyk (2010) and Merkley, Michaely, and Pacelli (2017), and in line with our hypothesis that analysts work harder in bad times.

B. Controlling for Analyst Busyness

We show in the paper that analysts increase their activity in bad times and that this is consistent with the analyst effort hypothesis. But this might mean that analysts have less time between reports that they issue. If becoming busier affects their performance, it may be important to control for analyst busyness. In Table IAXII, we add a new control variable—the number of firms covered by the analyst—to our main regressions of the CAR impact of recommendation changes. We find that our result that analysts have more of an impact in bad times is unaffected.

C. Analyst Attrition Regressions Using the Forecasts Sample

We estimate the attrition probits on the quarterly earnings forecasts sample to examine how likely analysts are to disappear from I/B/E/S in bad times and whether the accuracy of their earnings forecasts helps prevent attrition. The analysis in the paper uses the recommendation change sample. Here, we use the earnings forecasts sample. *Disappear* now equals one when the analyst made no one-quarter-ahead forecast for quarterly earnings on any firm in I/B/E/S in the next two quarters. The bad times dummy variables are set to one if the next two quarters contain a relevant bad times period. Table IAXIII finds evidence that both the crisis and credit crisis measures of bad times have approximately 2-3% higher attrition likelihood. We also define *Accuracy Quintile* as the average earnings forecast accuracy quintile (a higher quintile number denotes greater accuracy among all analysts covering the firm) of the analyst for all of the firms they covered that quarter. We show that greater

accuracy does indeed reduce attrition likelihood. We next interact accuracy with bad times and find significant coefficients only for the credit crisis. We conclude that career concerns is a plausible explanation for why analysts would work harder in bad times, but influential recommendation changes (results reported in the paper) seems to be more important than earnings forecast accuracy (results here) in reducing attrition risk.

D. Page Length of Analyst Reports

In the paper, we show that the length of analyst reports increases in bad times using a sample of reports from one broker—Morgan Stanley. Information about the report length is downloaded from report headers provided by Thomson Eikon (Thomson ONE is used for observations prior to October 2011). These report databases contain all reports including reiterations, and hence they may have many more observations than I/B/E/S which typically does not record reiterations of recommendations (see, for example, Brav and Lehavy (2003)). It is therefore possible that reports on reiteration days are different from the sample of reports found on I/B/E/S. Accordingly, we want to exclude all reports that are likely to be reiterations. We use the three days centered around earnings announcement dates and earnings guidance dates to identify reports that are most likely to be reiterations. This screen removes one-third of the reports in our report length sample. Using this reduced sample, in Table IAXIV we regress the number of pages in a report on bad times dummies with controls. We continue to find that reports in bad times are longer, consistent with the analyst effort hypothesis.

E. Testing the Conflicts of Interest Hypothesis with Signed Forecast Errors

A possible explanation for the greater impact of analysts in bad times is that potential conflicts of interest are less important in these times. To test this hypothesis, we examine the impact of bad times on an analyst's optimism bias. If bad times reduce investment banking conflicts and if the optimism bias can be attributed to conflicts of interest, analyst forecast optimism should be lower in bad times. We capture an analyst's optimism bias using the signed forecast error, which is the signed version of our absolute forecast error measure. In Table IAXV, we find that the signed forecast error scaled by the absolute value of actual earnings is mostly insignificantly different in bad times from that in good times. However, when we scale the signed forecast error

by prior volatility, we find that analysts are actually more optimistic in bad times than in good times. Hence we find little evidence for the conflicts of interest prediction that analysts are less optimistic in bad times.

F. Results Related to Different Skills Hypothesis

To test the different skills hypothesis, for each recommendation change we form a portfolio of peer firms that consists of firms that the analyst has issued a recommendation on in the last year. We then measure the CAR of these peer firms (equally weighting the CAR for all peers) around the recommendation change, excluding peers that receive a recommendation from the same analyst on the same date. A typical recommendation change is associated with about 10 peer firms in our sample. Table IAXVI reports regressions using this average peer CAR as the dependent variable. Looking at model (1)'s intercept coefficient, we find that downgrades in non-*Crisis* times are associated with a CAR of -0.054% (t=3.37) for peer firms, which suggests that revisions do spill over to other firms covered by the same analyst. When we consider whether this spillover effect increases in bad times, we find that the coefficient on *Crisis* is -0.104% (t=1.78)—evidence of a larger spillover for downgrades in bad times, albeit significant only at the 10% level. When we estimate a regression that includes all the relevant controls and industry fixed effects, the difference remains significant at -0.105% (t=1.71). We get more significant results with the *Credit Crisis* and *Recession* measures, which supports the view that there are greater spillover of downgrades to peer firms during bad times. Next we examine upgrades (models (9) to (16)). We see that although upgrades spill over positively to peer firms in good times (e.g., 0.110% for the non-*Crisis* measure of good times), there is no evidence that bad times increase this spillover effect.

Overall, we find that only the negative information produced by analysts during bad times contains a common component. This evidence offers some support for the hypothesis that analysts display different skills in bad times.

G. Results Related to the Overreaction Hypothesis

Another explanation for analysts' seemingly greater impact in bad times is that analysts do not really have more of an impact but rather investors simply overreact to analysts. Such overreaction might stem from the reduction in liquidity provision during bad times so investors have more of a price impact when they trade in response to recommendations. Alternatively, overreaction could stem from arbitrageurs being more constrained in bad times, in which case they cannot trade against the overreaction by some investors.

To investigate this, we form daily-rebalanced calendar-time portfolios that buy stocks from day 2 following the revision to day 21, that is, a one-month drift. We follow the standard approach in Barber, Lehavy, and Trueman (2007) when computing average daily returns, in which one dollar is placed in each revision and the weight of the revised stock varies according to its cumulative return since entering the portfolio. The portfolio's daily returns are compounded to monthly returns and regressed on the Carhart (1997) four factors plus a dummy variable for bad times. The bad times dummy is also interacted with each of the four factors to allow factor exposures to vary according to bad times. Consequently, the intercept measures the revision drift in good times, and the bad times dummy identifies whether the drift in bad times is statistically different from the good times drift. For each of our bad times measures, we have four portfolios—recommendation downgrades, recommendation upgrades, downward forecast revisions, and upward forecast revisions—for a total of 16 portfolios.

In Table IAXVII, we find that the intercepts of the regressions are all significantly negative for negative revisions and significantly positive for positive revisions, indicating that there is stock-price drift in response to analyst revisions in good times. However, the coefficients on the bad times dummies are statistically insignificant for almost all portfolios, which suggests that the bad times drift is statistically indistinguishable from the good times drift. When we add the intercept and the coefficients on bad times dummies to measure the stock-price drift of revisions in bad times, we do not find significant drift that is in the opposite direction of the revision. Overall, we do not find evidence that the larger stock-price impact of analysts in bad times is due to investor overreaction.

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Table IAI
Panel Regression of Recommendation Change CARs in Bad Times Excluding Credit Crisis

In this table we estimate the effect of bad times excluding all credit crisis observations on recommendation two-day CARs (in percent) controlling for firm, analyst, and recommendation characteristics, from 1993 to 2014. The benchmark return for the CAR is the return from a characteristics-matched DGTW portfolio. A recommendation change is defined as the analyst's current rating minus their prior outstanding rating (initiations and reiterations are excluded); changes made around earnings announcement and guidance days, and changes on multiple-recommendation days, are excluded. Bad times measures are as follows. *Crisis*: September to November 1987 (1987 crisis), August to December 1998 (LTCM), and July 2007 to March 2009 (*Credit Crisis*). *Recession* (NBER recessions): July 1990 to March 1991, March to November 2001, and December 2007 to June 2009. *High Uncertainty* represents the highest tercile (over the period 1983 to 2014) of the Baker, Bloom, and Davis (2016) uncertainty index. For the control variables, *LFR* is the analyst's prior-year leader-follower ratio, *Star Analyst* is a dummy indicating whether the analyst is a star in the most recent *Institutional Investor* poll, *Relative Experience* is the difference between the analyst's experience (in quarters) against the average of peers who cover the same firm, *Accuracy Quintile* is the average forecast accuracy quintile of the analyst's covered firms over the past year (quintile 5=most accurate), *Broker Size* is the number of analysts employed, *# Analysts* is the number of analysts covering the firm, *Size* is the firm's market cap in the prior June, *BM* is the book-to-market ratio, *Momentum* is the month $t-12$ to $t-2$ buy-and-hold return, and *Stock Volatility* is the month $t-1$ volatility of daily stock returns. For the count variables *Broker Size* and *# Analysts*, we add one before taking logs. *t*-statistics (in absolute values and based on standard errors clustered by calendar day) are in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels respectively. Industry fixed effects (F.E.) use the Fama and French (1997) 30-industry classification.

Table IAI (Cont'd)

Variable	Dependent Variable: CAR of Downgrades						Dependent Variable: CAR of Upgrades					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Crisis	0.044	0.473					-0.132	-0.479**				
	(0.15)	(1.42)					(0.63)	(2.15)				
Recession			-0.681***	-0.236					1.235***	0.767***		
			(4.08)	(1.26)					(4.56)	(2.66)		
High Uncertainty					-0.316***	-0.383***					0.155***	0.328***
					(4.64)	(5.07)					(2.59)	(5.28)
LFR		-0.046***		-0.045***		-0.044***		0.022***		0.022**		0.022**
		(3.19)		(3.18)		(3.00)		(2.59)		(2.55)		(2.47)
Star Analyst		-0.177**		-0.180**		-0.218***		0.083		0.084		0.127
		(2.13)		(2.16)		(2.59)		(0.59)		(0.60)		(0.89)
Relative Experience		-0.005***		-0.005***		-0.005***		0.010***		0.010***		0.009***
		(3.01)		(3.02)		(2.99)		(6.39)		(6.48)		(5.86)
Accuracy Quintile		-0.190***		-0.189***		-0.170**		0.272***		0.272***		0.271***
		(2.85)		(2.83)		(2.52)		(3.67)		(3.68)		(3.58)
Log Broker Size		-0.529***		-0.527***		-0.538***		0.542***		0.536***		0.552***
		(15.36)		(15.18)		(15.25)		(14.53)		(13.94)		(14.33)
Log # Analysts		0.227***		0.218***		0.241***		-0.457***		-0.439***		-0.441***
		(3.14)		(3.01)		(3.25)		(7.57)		(7.28)		(7.19)
Log Size		0.182***		0.188***		0.195***		-0.336***		-0.351***		-0.348***
		(7.18)		(7.45)		(7.53)		(13.67)		(13.46)		(13.99)
Log BM		0.133***		0.129***		0.153***		0.076*		0.081**		0.071*
		(2.86)		(2.78)		(3.29)		(1.90)		(2.02)		(1.72)
Momentum		-0.154**		-0.167**		-0.159**		-0.154***		-0.126**		-0.147***
		(2.22)		(2.39)		(2.27)		(2.74)		(2.38)		(2.59)
Stock Volatility		-19.703***		-18.611***		-18.687***		27.962***		25.412***		27.866***
		(7.20)		(6.71)		(6.89)		(7.37)		(7.33)		(7.25)
Intercept	-1.687***	-1.544***	-1.647***	-1.625***	-1.580***	-1.648***	2.044***	4.517***	1.985***	4.742***	1.990***	4.492***
	(55.18)	(3.93)	(53.16)	(4.14)	(43.41)	(4.16)	(68.19)	(11.63)	(70.91)	(11.56)	(50.53)	(11.46)
Good Times Ŷ	-1.687	-1.765	-1.647	-1.737	-1.580	-1.626	2.044	2.141	1.985	2.094	1.990	2.030
#Obs	63278	52960	63278	52960	61559	51612	60163	50736	60163	50736	58254	49230
Adj R-Sq	-0.0000	0.0167	0.0006	0.0166	0.0005	0.0176	-0.0000	0.0409	0.0018	0.0414	0.0001	0.0412
Industry F.E.	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

Table IAII
Panel Regression of Recommendation CARs in Bad Times Versus Normal Times

In this table we estimate the effect of bad times on recommendation two-day CARs (in percent) controlling for firm, analyst, and recommendation characteristics, from 1993 to 2014. The benchmark group is normal times rather than non-bad times. For each bad times measure, we sort non-bad times months into normal and good times based on the market return. *Good Times* equals one for the half with higher returns. The panel regressions estimate the effect of bad times relative to normal times on recommendation downgrade and upgrade two-day CARs (in percent) controlling for recommendation, firm, and analyst characteristics. Bad times measures and control variables are described in Table IAI. *t*-statistics (in absolute values and based on standard errors clustered by calendar day) are in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels respectively. Industry fixed effects (F.E.) use the Fama and French (1997) 30-industry classification.

Variable	Dependent Variable: CAR of Downgrades								Dependent Variable: CAR of Upgrades							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Crisis	-1.027***	-1.074***							0.753***	0.751***						
	(9.02)	(8.28)							(7.34)	(6.07)						
Credit Crisis			-1.268***	-1.439***							0.902***	0.984***				
			(11.04)	(11.69)							(7.94)	(6.96)				
Recession					-1.179***	-1.064***							1.095***	0.909***		
					(10.81)	(8.59)							(8.27)	(6.36)		
High Uncertainty							-0.527***	-0.638***							0.398***	0.493***
							(6.94)	(7.59)							(5.97)	(6.77)
Good Times	-0.066	-0.140**	-0.052	-0.100	-0.056	-0.084	-0.057	-0.147*	0.280***	0.222***	0.276***	0.208***	0.213***	0.137**	0.268***	0.214***
	(1.07)	(2.10)	(0.84)	(1.49)	(0.91)	(1.24)	(0.80)	(1.85)	(4.67)	(3.49)	(4.66)	(3.31)	(3.83)	(2.31)	(3.50)	(2.63)
LFR		-0.036***		-0.036***		-0.035***		-0.033**		0.026***		0.026***		0.026***		0.026***
		(2.83)		(2.83)		(2.76)		(2.56)		(3.22)		(3.21)		(3.16)		(3.01)
Star Analyst		-0.175**		-0.175**		-0.169**		-0.209**		0.050		0.049		0.047		0.082
		(2.17)		(2.17)		(2.10)		(2.56)		(0.38)		(0.38)		(0.36)		(0.63)
Relative Experience		-0.007***		-0.007***		-0.007***		-0.007***		0.010***		0.010***		0.010***		0.009***
		(4.01)		(3.94)		(3.95)		(3.86)		(6.14)		(6.10)		(6.14)		(5.74)
Accuracy Quintile		-0.235***		-0.234***		-0.240***		-0.222***		0.301***		0.295***		0.299***		0.302***
		(3.55)		(3.53)		(3.62)		(3.31)		(4.31)		(4.22)		(4.30)		(4.25)
Log Broker Size		-0.488***		-0.498***		-0.477***		-0.479***		0.523***		0.529***		0.516***		0.520***
		(15.20)		(15.73)		(15.05)		(14.82)		(14.95)		(14.98)		(15.18)		(14.90)
Log # Analysts		0.212***		0.200***		0.232***		0.293***		-0.498***		-0.488***		-0.499***		-0.525***
		(2.81)		(2.63)		(3.06)		(3.77)		(8.16)		(8.02)		(8.18)		(8.50)
Log Size		0.223***		0.237***		0.226***		0.207***		-0.365***		-0.373***		-0.376***		-0.356***
		(8.61)		(9.37)		(8.96)		(8.03)		(15.17)		(15.53)		(14.79)		(14.69)
Log BM		0.137***		0.147***		0.132***		0.164***		0.042		0.038		0.042		0.027
		(3.09)		(3.31)		(2.98)		(3.67)		(1.10)		(1.01)		(1.10)		(0.70)
Momentum		-0.127*		-0.132**		-0.156**		-0.096		-0.154***		-0.150***		-0.128**		-0.166***
		(1.92)		(1.99)		(2.34)		(1.44)		(2.87)		(2.79)		(2.46)		(3.06)
Stock Volatility		-20.932***		-20.461***		-19.390***		-22.812***		27.080***		26.690***		24.916***		28.913***
		(7.95)		(7.87)		(7.24)		(8.72)		(7.74)		(7.68)		(7.57)		(8.13)
Intercept	-1.651***	-2.016***	-1.657***	-2.164***	-1.634***	-2.211***	-1.607***	-1.874***	1.905***	4.886***	1.902***	4.977***	1.897***	5.161***	1.892***	4.704***
	(35.66)	(5.13)	(35.98)	(5.59)	(35.74)	(5.70)	(30.72)	(4.80)	(50.27)	(13.19)	(50.49)	(13.44)	(49.31)	(13.30)	(38.74)	(12.47)
Normal Times Ŷ	-1.651	-1.685	-1.657	-1.690	-1.634	-1.708	-1.607	-1.613	1.905	2.029	1.902	2.023	1.897	2.049	1.892	1.978
#Obs	71070	59511	71070	59511	71070	59511	69351	58163	67425	56901	67425	56901	67425	56901	65516	55395
Adj R-Sq	0.0024	0.0200	0.0032	0.0213	0.0033	0.0199	0.0012	0.0195	0.0016	0.0434	0.0019	0.0441	0.0030	0.0439	0.0007	0.0428
Industry F.E.	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

Table IAIII
Panel Regression of Forecast Revision CARs in Bad Times

In this table we estimate the effect of bad times on earnings forecast revisions two-day CARs (in percent) controlling for forecast, firm, and analyst characteristics. The benchmark return for the CAR is the return from a characteristics-matched DGTW portfolio. The sample is from 1983 to 2014. *Forecast Revision* is the analyst's current one-quarter-ahead earnings forecast minus her their outstanding forecast (i.e., initiations are excluded) scaled by price and revisions made around earnings announcement and guidance days, and revisions made on multiple-forecast days, are excluded. Bad times measures and control variables are described in Table IAI. *t*-statistics (in absolute values and based on standard errors clustered by calendar day) are in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels respectively. Industry fixed effects (F.E.) use the Fama and French (1997) 30-industry classification.

Variable	Dependent Variable: CAR of Downward Revisions								Dependent Variable: CAR of Upward Revisions							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Crisis	-0.398***	-0.384***							0.198***	0.170**						
	(6.50)	(5.49)							(2.79)	(2.13)						
Credit Crisis			-0.525***	-0.533***							0.211***	0.169*				
			(7.91)	(7.14)							(2.68)	(1.96)				
Recession					-0.323***	-0.238***							0.108	0.019		
					(5.87)	(3.50)							(1.55)	(0.23)		
High Uncertainty							-0.070**	-0.095***							0.021	0.013
							(2.31)	(2.79)							(0.70)	(0.39)
Forecast Revision		6.865*		6.785*		6.855*		6.547*		9.306		9.214		9.548		8.969
		(1.81)		(1.79)		(1.81)		(1.72)		(1.18)		(1.17)		(1.21)		(1.12)
LFR		-0.025***		-0.024***		-0.026***		-0.027***		0.040***		0.040***		0.041***		0.042***
		(4.31)		(4.17)		(4.56)		(4.61)		(6.05)		(6.03)		(6.12)		(6.18)
Star Analyst		0.025		0.021		0.034		0.035		-0.093***		-0.094***		-0.097***		-0.098***
		(0.76)		(0.65)		(1.03)		(1.04)		(2.67)		(2.68)		(2.78)		(2.69)
Relative Experience		-0.001		-0.001		-0.001		-0.001		0.001		0.001		0.001		0.001
		(0.87)		(0.88)		(0.88)		(1.04)		(0.72)		(0.72)		(0.75)		(0.61)
Accuracy Quintile		-0.015		-0.015		-0.014		-0.004		0.040		0.040		0.039		0.037
		(0.55)		(0.58)		(0.54)		(0.17)		(1.45)		(1.45)		(1.42)		(1.29)
Log Broker Size		-0.057***		-0.057***		-0.058***		-0.067***		0.052***		0.052***		0.053***		0.050***
		(3.30)		(3.32)		(3.38)		(3.75)		(2.86)		(2.86)		(2.92)		(2.68)
Log # Analysts		0.096**		0.092**		0.108***		0.134***		-0.076*		-0.079*		-0.087**		-0.093**
		(2.31)		(2.22)		(2.59)		(3.10)		(1.78)		(1.85)		(2.06)		(2.09)
Log Size		0.033**		0.039***		0.028**		0.019		-0.075***		-0.075***		-0.070***		-0.070***
		(2.34)		(2.75)		(1.98)		(1.28)		(5.18)		(5.15)		(4.84)		(4.69)
Log BM		-0.019		-0.016		-0.018		-0.019		0.012		0.011		0.010		0.015
		(0.85)		(0.73)		(0.81)		(0.83)		(0.53)		(0.51)		(0.43)		(0.63)
Momentum		0.040		0.034		0.043		0.069		0.073**		0.072**		0.067*		0.063*
		(0.94)		(0.80)		(0.98)		(1.56)		(2.04)		(2.03)		(1.86)		(1.75)
Stock Volatility		-1.036		-0.438		-1.506		-3.383		4.416*		4.537*		5.057**		5.295**
		(0.46)		(0.20)		(0.64)		(1.51)		(1.88)		(1.94)		(2.09)		(2.23)
Intercept	-0.294***	-0.646***	-0.288***	-0.717***	-0.296***	-0.598***	-0.323***	-0.465**	0.439***	1.234***	0.441***	1.231***	0.447***	1.184***	0.453***	1.205***
	(20.46)	(3.00)	(20.06)	(3.36)	(20.35)	(2.76)	(19.78)	(2.14)	(31.41)	(5.34)	(31.68)	(5.33)	(32.34)	(5.12)	(24.25)	(5.10)
Good Times Ŷ	-0.294	-0.230	-0.288	-0.220	-0.296	-0.243	-0.323	-0.244	0.439	0.413	0.441	0.415	0.447	0.427	0.453	0.426
#Obs	172482	105097	172482	105097	172482	105097	164257	99663	112149	69773	112149	69773	112149	69773	107047	66470
Adj R-Sq	0.0009	0.0030	0.0013	0.0036	0.0007	0.0024	0.0001	0.0022	0.0002	0.0053	0.0002	0.0052	0.0001	0.0051	-0.0000	0.0051
Industry F.E.	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

Table IAIV
Panel Regression of Recommendation Change CARs on Market, Industry, and Firm-Specific High Uncertainty Periods, Alternate Specifications

In this table we estimate the effect of high market, industry, and firm-specific uncertainty on the two-day CAR (in percent) of recommendation changes. Control variables for analyst characteristics are included in even specifications but not reported. Bad times measures and control variables are described in Table IAI. Control variables for analyst characteristics are included in even specifications but not reported. Definitions of bad times measures and control variables are described in Table I and Table III, respectively. The total variance of a firm's daily stock returns in the prior month is decomposed into market, industry, and firm components by regressing daily returns on market returns and market-purged industry returns (Fama and French (1997) 30-industry classification). In Panel A, *High Uncertainty* equals one when the relevant component is in the top quintile of the firm's time-series of monthly variance components. In Panel B, *High Uncertainty* equals one when the relevant component for the firm is in the top tercile in the monthly cross-section of firms. The benchmark return for the CAR is the return from a characteristics-matched DGTW portfolio. The sample is from 1993 to 2014. A recommendation change is defined as the analyst's current rating minus their prior outstanding rating (initiations and reiterations are excluded); changes made around earnings announcement and guidance days, and changes on multiple-recommendation days, are excluded. *t*-statistics (in absolute values and based on standard errors clustered by calendar day) are in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels respectively. Industry fixed effects (F.E.) use the Fama and French (1997) 30-industry classification.

Panel A: Time-Series Definition of High Uncertainty, Defined as Top Quintile

Variable	Dependent Variable: CAR of Downgrades								Dependent Variable: CAR of Upgrades							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
High Firm Uncertainty	-0.177**	-0.236***					0.025	-0.016	0.699***	0.677***					0.629***	0.587***
	(2.31)	(2.80)					(0.32)	(0.19)	(8.14)	(7.14)					(7.44)	(6.37)
High Ind. Uncertainty			-0.220***	-0.232***			-0.098	-0.079			0.230***	0.248***			0.002	0.026
			(3.31)	(3.17)			(1.42)	(1.05)			(3.14)	(3.03)			(0.03)	(0.33)
High Mkt Uncertainty					-0.597***	-0.674***	-0.582***	-0.652***					0.411***	0.453***	0.262***	0.309***
					(8.38)	(8.57)	(8.13)	(8.29)					(6.16)	(6.15)	(3.71)	(3.93)
Good Times Ŷ	-1.785	-1.860	-1.771	-1.856	-1.677	-1.745	-1.664	-1.729	1.986	2.097	2.072	2.175	2.029	2.126	1.940	2.038
#Obs	71067	60699	71067	60699	71067	60699	71067	60699	67424	58030	67424	58030	67424	58030	67424	58030
Adj R-Sq	0.0001	0.0068	0.0002	0.0068	0.0014	0.0084	0.0014	0.0083	0.0021	0.0138	0.0002	0.0122	0.0008	0.0129	0.0023	0.0142
Controls, Ind F.E.	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

Panel B: Cross-Sectional Definition of High Uncertainty, Defined as Top Tercile

Variable	Dependent Variable: CAR of Downgrades								Dependent Variable: CAR of Upgrades							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
High Firm Uncertainty	-1.142***	-1.211***					-1.034***	-1.103***	1.848***	1.886***					1.791***	1.840***
	(12.02)	(11.51)					(10.87)	(10.58)	(18.37)	(16.48)					(17.49)	(16.12)
High Ind. Uncertainty			-0.201***	-0.250***			0.030	-0.004			0.108**	0.208***			-0.172***	-0.081
			(3.61)	(3.96)			(0.53)	(0.07)			(2.06)	(3.32)			(3.35)	(1.34)
High Mkt Uncertainty					-0.632***	-0.652***	-0.476***	-0.498***					0.612***	0.519***	0.383***	0.304***
					(10.96)	(10.14)	(8.23)	(7.82)					(12.01)	(9.37)	(6.89)	(5.10)
Good Times Ŷ	-1.601	-1.681	-1.744	-1.813	-1.572	-1.648	-1.445	-1.500	1.804	1.910	2.081	2.148	1.881	2.022	1.730	1.828
#Obs	71067	60699	71067	60699	71067	60699	71067	60699	67424	58030	67424	58030	67424	58030	67424	58030
Adj R-Sq	0.0043	0.0111	0.0002	0.0069	0.0020	0.0086	0.0054	0.0122	0.0131	0.0244	0.0001	0.0122	0.0024	0.0136	0.0141	0.0249
Controls, Ind F.E.	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

Table IAV
Frequency of Recommendation Changes and Reiterations in Bad Times

In this table we present the number of recommendation changes and reiterations per month per firm across all analysts. Months with no activity are assigned an activity value of zero. The average activity per month per firm is reported for good times and bad times. Bad times measures are described in Table IAI. Reiterations are defined as explicit reiterations in the I/B/E/S recommendations file, or implicit reiterations where we assume that an analyst's outstanding rating is reiterated when the analyst issues a quarterly earnings forecast (I/B/E/S Detail Q1 file) or target price forecast (I/B/E/S Target Price file) without issuing a recommendation in the recommendations file. *t*-statistics (in absolute values and based on standard errors clustered by industry-quarter) are in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels respectively.

Bad Times Measure	Recommendations Activity Per Month Per Firm					
	# Changes			# Reiterations		
	Bad Times	Good Times	Difference	Bad Times	Good Times	Difference
Crisis	0.238***	0.183***	0.054***	0.903***	0.771***	0.132***
	(32.25)	(74.66)	(7.99)	(29.04)	(68.09)	(4.52)
	77994	658703		80708	682582	
Credit Crisis	0.252***	0.183***	0.069***	1.006***	0.765***	0.241***
	(27.41)	(75.79)	(8.03)	(26.55)	(68.93)	(6.80)
	60451	676246		62383	700907	
Recession	0.220***	0.185***	0.035***	0.937***	0.766***	0.171***
	(31.71)	(75.28)	(5.55)	(30.96)	(68.44)	(6.12)
	82159	654538		84656	678634	
High Uncertainty	0.195***	0.185***	0.010***	0.852***	0.732***	0.121***
	(54.06)	(71.10)	(3.29)	(47.71)	(66.22)	(7.71)
	260445	458076		268219	471509	

Table IAVI
Subsample of Crisis-Seasoned Analysts, With and Without Analyst or Broker Fixed Effects

In this table we report probits of the influential probability of recommendation changes with and without analyst fixed effects (Panel A) and with and without broker fixed effects (Panel B) on a subsample of crisis-seasoned analysts, defined as those who are in I/B/E/S before 2007 and survive beyond the end of the credit crisis in March 2009. Bad times measures and control variables are described in Table IAI. *t*-statistics (in absolute values and based on standard errors clustered by calendar day) are in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels respectively. Industry fixed effects (F.E.) use the Fama and French (1997) 30-industry classification.

Variable	Bad Times Measure							
	Crisis		Credit Crisis		Recession		High Uncertainty	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Influential Probability of Recommendation Downgrades With and Without Analyst Fixed Effects								
Bad Times	0.059***	0.067***	0.066***	0.074***	0.048***	0.050***	0.024***	0.016***
	(9.10)	(9.44)	(9.75)	(9.93)	(7.25)	(6.88)	(5.25)	(3.21)
Effect of Ana. FE on coeff.		14%		12%		4%		-33%
Controls, Ind. F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Analyst F.E.	No	Yes	No	Yes	No	Yes	No	Yes
Panel B: Influential Probability of Recommendation Upgrades With and Without Analyst Fixed Effects								
Bad Times	0.043***	0.043***	0.050***	0.050***	0.030***	0.026***	0.013***	0.007
	(5.12)	(5.33)	(5.70)	(5.95)	(3.61)	(3.22)	(2.63)	(1.34)
Effect of Ana. FE on coeff.		0%		0%		-13%		-46%
Controls, Ind. F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Analyst F.E.	No	Yes	No	Yes	No	Yes	No	Yes
Panel C: Influential Probability of Recommendation Downgrades With and Without Broker Fixed Effects								
Bad Times	0.059***	0.058***	0.066***	0.063***	0.048***	0.043***	0.024***	0.017***
	(9.10)	(8.58)	(9.75)	(8.97)	(7.25)	(6.37)	(5.25)	(3.63)
Effect of Brok. FE on coeff.		-2%		-5%		-10%		-29%
Controls, Ind. F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Broker F.E.	No	Yes	No	Yes	No	Yes	No	Yes
Panel D: Influential Probability of Recommendation Upgrades With and Without Broker Fixed Effects								
Bad Times	0.043***	0.040***	0.050***	0.046***	0.030***	0.025***	0.013***	0.010*
	(5.12)	(5.14)	(5.70)	(5.65)	(3.61)	(3.26)	(2.63)	(1.87)
Effect of Brok. FE on coeff.		-7%		-8%		-17%		-23%
Controls, Ind. F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Broker F.E.	No	Yes	No	Yes	No	Yes	No	Yes

Table IAVII

Panel Regression of Recommendation Change CARs in Bad Times with Control for Careers Beginning in Bad Times

In this table we estimate panel regressions of the effect of bad times on recommendation downgrade and upgrade two-day CARs (in percent) controlling for recommendation, firm, and analyst characteristics. The new control added is a dummy for analysts whose first appearance in I/B/E/S is in a bad times period (*Start in Bad Times*) or during the credit crisis (*Start in Credit Crisis*). Bad times measures and control variables are described in Table IAI. *t*-statistics (in absolute values and based on standard errors clustered by calendar day) are in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels respectively. Industry fixed effects (F.E.) use the Fama and French (1997) 30-industry classification.

Variable	Dependent Variable: CAR of Downgrades								Dependent Variable: CAR of Upgrades							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Crisis	-0.991***	-1.001***							0.614***	0.641***						
	(9.14)	(8.06)							(6.15)	(5.20)						
Credit Crisis			-1.239***	-1.380***							0.764***	0.877***				
			(11.31)	(11.82)							(6.87)	(6.23)				
Recession					-1.148***	-1.017***							0.989***	0.837***		
					(11.08)	(8.65)							(7.63)	(5.95)		
High Uncertainty							-0.495***	-0.551***							0.261***	0.378***
							(7.55)	(7.58)							(4.40)	(5.76)
LFR		-0.036***		-0.036***		-0.035***		-0.033**		0.026***		0.026***		0.026***		0.025***
		(2.83)		(2.83)		(2.76)		(2.55)		(3.17)		(3.16)		(3.13)		(2.99)
Star Analyst		-0.183**		-0.183**		-0.177**		-0.211**		0.057		0.055		0.053		0.085
		(2.26)		(2.25)		(2.17)		(2.57)		(0.44)		(0.43)		(0.41)		(0.65)
Relative Experience		-0.007***		-0.007***		-0.007***		-0.007***		0.010***		0.010***		0.010***		0.009***
		(4.25)		(4.14)		(4.14)		(3.93)		(6.28)		(6.24)		(6.26)		(5.79)
Accuracy Quintile		-0.234***		-0.233***		-0.239***		-0.222***		0.300***		0.294***		0.298***		0.301***
		(3.53)		(3.52)		(3.60)		(3.32)		(4.30)		(4.22)		(4.30)		(4.24)
Log Broker Size		-0.488***		-0.498***		-0.477***		-0.479***		0.523***		0.529***		0.516***		0.520***
		(15.17)		(15.71)		(15.04)		(14.79)		(14.95)		(14.99)		(15.18)		(14.87)
Log # Analysts		0.212***		0.200***		0.232***		0.292***		-0.498***		-0.488***		-0.499***		-0.522***
		(2.81)		(2.64)		(3.06)		(3.77)		(8.15)		(8.03)		(8.18)		(8.46)
Log Size		0.225***		0.238***		0.228***		0.207***		-0.367***		-0.374***		-0.377***		-0.358***
		(8.70)		(9.45)		(9.06)		(8.05)		(15.23)		(15.57)		(14.84)		(14.70)
Log BM		0.141***		0.150***		0.136***		0.163***		0.041		0.038		0.040		0.030
		(3.16)		(3.37)		(3.05)		(3.63)		(1.08)		(0.99)		(1.06)		(0.76)
Momentum		-0.127*		-0.132**		-0.157**		-0.095		-0.158***		-0.155***		-0.130**		-0.171***
		(1.92)		(1.98)		(2.34)		(1.42)		(2.93)		(2.86)		(2.52)		(3.13)
Stock Volatility		-20.957***		-20.555***		-19.477***		-22.894***		27.124***		26.802***		24.993***		28.948***
		(7.95)		(7.90)		(7.26)		(8.74)		(7.75)		(7.70)		(7.59)		(8.13)
Start in Bad Times		-0.185***		-0.171**		-0.179***		-0.131*		0.038		0.034		0.041		0.001
		(2.67)		(2.47)		(2.58)		(1.86)		(0.67)		(0.60)		(0.71)		(0.01)
Start in Credit Crisis		-0.109		-0.071		-0.052		0.087		0.218		0.204		0.174		0.118
		(0.41)		(0.27)		(0.20)		(0.31)		(1.30)		(1.22)		(1.04)		(0.64)
Intercept	-1.687***	-2.068***	-1.686***	-2.191***	-1.665***	-2.228***	-1.638***	-1.922***	2.044***	5.009***	2.041***	5.088***	2.003***	5.233***	2.029***	4.830***
	(55.18)	(5.26)	(54.70)	(5.64)	(54.31)	(5.71)	(45.55)	(4.92)	(68.19)	(13.33)	(68.76)	(13.55)	(72.06)	(13.44)	(52.86)	(12.62)
Good Times $\hat{Y}$	-1.687	-1.761	-1.686	-1.745	-1.665	-1.755	-1.638	-1.696	2.044	2.139	2.041	2.127	2.003	2.118	2.029	2.090
#Obs	71070	59511	71070	59511	71070	59511	69351	58163	67425	56901	67425	56901	67425	56901	65516	55395
Adj R-Sq	0.0024	0.0200	0.0032	0.0214	0.0033	0.0200	0.0012	0.0194	0.0011	0.0432	0.0015	0.0439	0.0028	0.0438	0.0004	0.0426
Industry F.E.	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

Table IAVIII
Panel Regression of Recommendation Change CARs in Bad Times for Financial Firms

In this table we estimate panel regressions of the effect of bad times on recommendation downgrade and upgrade two-day CARs (in percent) controlling for recommendation, firm, and analyst characteristics on financial firms (group 29 of the Fama and French (1997) 30-industry classification). The benchmark return for the CAR is the return from a characteristics-matched DGTW portfolio. The sample is from 1993 to 2014. A recommendation change is defined as the analyst's current rating minus their prior outstanding rating (initiations and reiterations are excluded); changes made around earnings announcement and guidance days, and changes on multiple-recommendation days, are excluded. Bad times measures and control variables are described in Table IAI. *t*-statistics (in absolute values and based on standard errors clustered by calendar day) are in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels respectively. No industry fixed effects are used since the sample contains only one industry.

Variable	Dependent Variable: Downgrades on Financial Firms								Dependent Variable: Upgrades on Financial Firms							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Crisis	-2.118***	-1.241***							1.473***	0.986***						
	(7.29)	(4.36)							(5.15)	(3.88)						
Credit Crisis			-2.498***	-1.600***							1.738***	1.145***				
			(7.47)	(5.08)							(5.25)	(3.92)				
Recession					-1.846***	-0.712***							1.418***	0.664***		
					(6.52)	(2.66)							(5.23)	(2.93)		
High Uncertainty							-0.858***	-0.584***							0.647***	0.434***
							(6.44)	(4.87)							(5.21)	(4.19)
LFR		0.008		0.008		0.011		0.009		0.024*		0.025*		0.025*		0.025
		(0.56)		(0.56)		(0.70)		(0.58)		(1.71)		(1.73)		(1.72)		(1.60)
Star Analyst		0.154		0.120		0.187		0.155		-0.233*		-0.217		-0.241*		-0.235*
		(0.87)		(0.67)		(1.06)		(0.86)		(1.72)		(1.61)		(1.78)		(1.69)
Relative Experience		-0.003		-0.002		-0.004		-0.003		0.011**		0.011**		0.011**		0.010**
		(0.86)		(0.57)		(1.10)		(0.69)		(2.48)		(2.40)		(2.56)		(2.25)
Accuracy Quintile		-0.208		-0.210		-0.234*		-0.242*		0.217**		0.212**		0.215**		0.244**
		(1.56)		(1.58)		(1.75)		(1.79)		(2.04)		(2.00)		(2.01)		(2.25)
Log Broker Size		-0.454***		-0.453***		-0.468***		-0.469***		0.484***		0.481***		0.488***		0.499***
		(8.49)		(8.41)		(8.64)		(8.61)		(9.04)		(9.00)		(8.99)		(9.05)
Log # Analysts		0.369***		0.366***		0.436***		0.455***		-0.278**		-0.284**		-0.337***		-0.336***
		(2.67)		(2.65)		(3.13)		(3.22)		(2.32)		(2.37)		(2.86)		(2.80)
Log Size		0.104**		0.110**		0.078		0.082*		-0.159***		-0.160***		-0.143***		-0.141***
		(2.12)		(2.29)		(1.59)		(1.66)		(4.21)		(4.23)		(3.80)		(3.68)
Log BM		-0.018		-0.000		-0.013		0.020		0.073		0.059		0.066		-0.005
		(0.18)		(0.00)		(0.13)		(0.20)		(0.90)		(0.73)		(0.80)		(0.07)
Momentum		0.399***		0.371***		0.470***		0.496***		-0.106		-0.096		-0.142		-0.185
		(2.88)		(2.67)		(3.37)		(3.49)		(0.83)		(0.76)		(1.07)		(1.32)
Stock Volatility		-39.097***		-38.151***		-41.805***		-44.778***		30.131***		29.962***		30.897***		34.164***
		(4.20)		(4.18)		(4.37)		(4.89)		(4.57)		(4.61)		(4.43)		(4.87)
Intercept	-1.087***	-0.521	-1.100***	-0.613	-1.122***	-0.179	-1.062***	-0.034	1.315***	1.305**	1.323***	1.348**	1.316***	1.204*	1.263***	0.867
	(24.17)	(0.67)	(24.07)	(0.80)	(23.74)	(0.23)	(19.20)	(0.04)	(32.32)	(2.15)	(32.12)	(2.24)	(31.44)	(1.93)	(25.47)	(1.37)
Good Times Ŷ	-1.087	-1.310	-1.100	-1.299	-1.122	-1.374	-1.062	-1.258	1.315	1.441	1.323	1.446	1.316	1.473	1.263	1.406
#Obs	13221	11013	13221	11013	13221	11013	13000	10843	11391	9510	11391	9510	11391	9510	11109	9283
Adj R-Sq	0.0174	0.0483	0.0201	0.0503	0.0132	0.0452	0.0059	0.0463	0.0120	0.0459	0.0138	0.0466	0.0114	0.0435	0.0049	0.0431

Table IAIX
Panel Regression of Forecast Revision CARs in Bad Times for Financial Firms

In this table we estimate panel regressions of the effect of bad times on earnings forecast revision two-day CARs (in percent) controlling for forecast, firm, and analyst characteristics on financial firms (group 29 of the Fama and French (1997) 30-industry classification). The benchmark return for the CAR is the return from a characteristics-matched DGTW portfolio. The sample is from 1983 to 2014. A forecast revision is defined as the analyst's current one-quarter-ahead earnings forecast minus their prior outstanding forecast (i.e., initiations are excluded) scaled by price; revisions made around earnings announcement and guidance days, and revisions on multiple-forecast days, are excluded. Bad times measures and control variables are described in Table IAI. *t*-statistics (in absolute values and based on standard errors clustered by calendar day) are in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels respectively. Industry fixed effects (F.E.) use the Fama and French (1997) 30-industry classification.

Variable	Downward Revisions on Financial Firms								Upward Revisions on Financial Firms							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Crisis	-0.401**	-0.237							0.010	-0.073						
	(2.06)	(1.19)							(0.05)	(0.38)						
Credit Crisis			-0.451**	-0.295							0.101	0.033				
			(2.18)	(1.39)							(0.43)	(0.16)				
Recession					-0.391**	-0.232							0.075	-0.045		
					(1.98)	(1.44)							(0.33)	(0.25)		
High Uncertainty							-0.025	-0.031							-0.035	-0.039
							(0.26)	(0.30)							(0.54)	(0.57)
Forecast Revision		10.530		10.482		10.538		10.804		11.995		12.175		12.013		10.214
		(1.43)		(1.42)		(1.43)		(1.45)		(0.57)		(0.58)		(0.57)		(0.48)
LFR		-0.064***		-0.064***		-0.065***		-0.070***		-0.011		-0.012		-0.011		-0.014
		(3.12)		(3.09)		(3.12)		(3.20)		(0.29)		(0.31)		(0.30)		(0.33)
Star Analyst		0.111		0.104		0.113		0.125		-0.041		-0.036		-0.039		-0.030
		(1.44)		(1.35)		(1.44)		(1.52)		(0.63)		(0.57)		(0.61)		(0.45)
Relative Experience		-0.000		-0.000		-0.000		0.000		0.002		0.002		0.002		0.003
		(0.04)		(0.03)		(0.06)		(0.07)		(0.98)		(0.97)		(0.97)		(0.95)
Accuracy Quintile		-0.023		-0.022		-0.026		-0.027		-0.067		-0.067		-0.067		-0.065
		(0.38)		(0.37)		(0.43)		(0.44)		(0.98)		(0.98)		(0.99)		(0.92)
Log Broker Size		-0.006		-0.006		-0.008		-0.011		0.014		0.012		0.013		0.012
		(0.14)		(0.13)		(0.17)		(0.24)		(0.41)		(0.36)		(0.39)		(0.35)
Log # Analysts		0.268**		0.270**		0.275**		0.311***		-0.058		-0.053		-0.056		-0.023
		(2.53)		(2.55)		(2.57)		(2.67)		(0.59)		(0.54)		(0.57)		(0.22)
Log Size		0.034		0.034		0.032		0.027		-0.052		-0.054		-0.053		-0.055
		(0.96)		(0.95)		(0.89)		(0.71)		(1.45)		(1.50)		(1.46)		(1.47)
Log BM		0.097**		0.097**		0.096**		0.110**		-0.063		-0.060		-0.062		-0.056
		(2.09)		(2.10)		(2.08)		(2.18)		(1.46)		(1.39)		(1.44)		(1.23)
Momentum		0.035		0.025		0.032		0.069		-0.008		-0.002		-0.007		0.014
		(0.36)		(0.25)		(0.36)		(0.72)		(0.08)		(0.02)		(0.07)		(0.15)
Stock Volatility		-0.590		-0.308		-0.188		-2.130		1.731		1.203		1.712		1.933
		(0.11)		(0.06)		(0.03)		(0.40)		(0.31)		(0.22)		(0.31)		(0.35)
Intercept	-0.222***	-1.122**	-0.219***	-1.130**	-0.215***	-1.095**	-0.289***	-1.062**	0.253***	1.318**	0.248***	1.338**	0.248***	1.327**	0.269***	1.289*
	(6.40)	(2.36)	(6.30)	(2.39)	(8.29)	(2.31)	(5.04)	(2.15)	(8.77)	(1.97)	(8.57)	(2.00)	(9.07)	(1.97)	(6.85)	(1.87)
Good Times Ŷ	-0.222	-0.252	-0.219	-0.246	-0.215	-0.248	-0.289	-0.286	0.253	0.259	0.248	0.252	0.248	0.257	0.269	0.270
#Obs	19173	19173	19173	19173	19173	19173	18219	18219	13012	13012	13012	13012	13012	13012	12331	12331
Adj R-Sq	0.0015	0.0057	0.0019	0.0059	0.0016	0.0056	-0.0000	0.0053	-0.0001	0.0014	-0.0000	0.0014	-0.0000	0.0014	-0.0000	0.0011
Industry F.E.	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

Table IAX
Absolute Forecast Error Scaled by Implied Volatility or Unscaled in Bad Times

In this table we estimate the effect of bad times on an analyst's absolute forecast error, where absolute forecast error is scaled by implied volatility (annualized) five trading days before the forecast (Panel A), and when the absolute forecast error is unscaled (Panel B). The dependent variable is multiplied by 100. The sample period is from 1996 to 2014 because of the availability of implied volatility data. Absolute forecast error is actual minus forecasted earnings. Scaled and unscaled forecast errors are winsorized at the extreme 1% before taking absolute values. Bad times measures and control variables are described in Table IAI. Additional controls specific to forecasts are also included. *Optimistic Forecast* is an indicator variable equal to one if the forecast is above the final consensus, *Days to Annc* is the number of days from the forecast to the next earnings announcement date, *Multiple Forecast Day* is a dummy indicating whether more than one analyst issued a forecast on that day, and *Dispersion* is the dispersion of forecasts making up the final consensus. For the count variables *Broker Size*, *# Analysts*, and *Days to Annc*, we add one before taking logs. *t*-statistics (in absolute values and based on standard errors clustered by industry-quarter) are in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels respectively. Industry fixed effects (F.E.) use the Fama and French (1997) 30-industry classification.

Panel A: Absolute Forecast Error Scaled by Implied Volatility

Variable	Dependent Variable: Absolute Forecast Error Scaled by Implied Volatility (1996 to 2014)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crisis	-2.671***	-2.493***						
	(3.11)	(4.97)						
Credit Crisis			-1.589*	-1.532***				
			(1.71)	(2.98)				
Recession					-5.130***	-4.227***		
					(5.99)	(8.63)		
High Uncertainty							2.631***	1.165***
							(3.84)	(2.79)
Optimistic Forecast		-2.042***		-2.035***		-2.063***		-1.946***
		(10.99)		(10.94)		(11.16)		(10.53)
LFR		-0.250***		-0.250***		-0.251***		-0.222***
		(11.79)		(11.79)		(12.00)		(10.61)
Star Analyst		0.063		0.065		0.056		0.185
		(0.34)		(0.35)		(0.30)		(1.04)
Relative Experience		-0.012***		-0.012***		-0.012***		-0.011***
		(3.29)		(3.28)		(3.25)		(2.85)
Accuracy Quintile		-0.666***		-0.663***		-0.682***		-0.569***
		(5.95)		(5.92)		(6.09)		(5.08)
Log Days to Annc		1.330***		1.318***		1.331***		1.201***
		(13.61)		(13.46)		(13.62)		(12.35)
Mutiple Forecast Day		-2.806***		-2.802***		-2.776***		-2.689***
		(14.22)		(14.19)		(14.15)		(13.46)
Log Broker Size		0.205**		0.205**		0.222**		0.181**
		(2.25)		(2.25)		(2.47)		(2.00)
Log # Analysts		-1.109**		-0.997**		-1.251***		-0.863*
		(2.30)		(2.08)		(2.62)		(1.85)
Log Size		3.185***		3.168***		3.221***		2.882***
		(15.10)		(15.01)		(15.36)		(13.80)
Log BM		4.120***		4.146***		4.026***		4.137***
		(18.70)		(18.77)		(18.36)		(18.06)
Momentum		1.574***		1.679***		1.210***		1.766***
		(5.23)		(5.50)		(4.14)		(5.84)
Dispersion		-0.000		-0.000		-0.000		-0.000
		(0.17)		(0.16)		(0.19)		(0.17)
Intercept	20.045***	-21.868***	19.870***	-22.043***	20.450***	-21.789***	17.863***	-19.319***
	(50.56)	(8.85)	(50.73)	(8.92)	(52.30)	(8.82)	(36.39)	(7.69)
Good Times $\hat{Y}$	20.045	19.449	19.870	19.288	20.450	19.744	17.863	18.026
#Obs	309671	272670	309671	272670	309671	272670	291850	256670
Adj R-Sq	0.0010	0.1055	0.0003	0.1049	0.0041	0.1073	0.0022	0.1061
Industry F.E.	No	Yes	No	Yes	No	Yes	No	Yes

Table IAX (Cont'd)

Panel B: Absolute Forecast Error Unscaled

Variable	Dependent Variable: Absolute Forecast Error Unscaled							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crisis	1.456***	1.504***						
	(3.90)	(6.49)						
Credit Crisis			2.020***	2.060***				
			(4.92)	(8.93)				
Recession					1.350***	1.632***		
					(3.56)	(6.95)		
High Uncertainty							1.076***	0.651***
							(5.48)	(4.56)
Optimistic Forecast		-0.224***		-0.232***		-0.216***		-0.205***
		(3.25)		(3.40)		(3.11)		(2.94)
LFR		-0.148***		-0.150***		-0.145***		-0.138***
		(14.98)		(15.30)		(14.51)		(13.64)
Star Analyst		0.678***		0.691***		0.665***		0.731***
		(8.87)		(9.07)		(8.74)		(9.55)
Relative Experience		-0.007***		-0.007***		-0.007***		-0.007***
		(5.26)		(5.28)		(5.24)		(5.04)
Accuracy Quintile		-0.319***		-0.317***		-0.315***		-0.309***
		(7.15)		(7.12)		(7.07)		(6.72)
Log Days to Annc		0.570***		0.576***		0.570***		0.553***
		(14.27)		(14.38)		(14.37)		(13.62)
Mutiple Forecast Day		-0.833***		-0.827***		-0.852***		-0.832***
		(12.09)		(12.00)		(12.27)		(11.83)
Log Broker Size		-0.185***		-0.183***		-0.192***		-0.215***
		(5.07)		(5.06)		(5.20)		(5.61)
Log # Analysts		0.167		0.178		0.180		0.016
		(0.94)		(1.01)		(1.02)		(0.09)
Log Size		0.179***		0.169***		0.178***		0.176***
		(3.02)		(2.87)		(3.00)		(2.88)
Log BM		1.832***		1.829***		1.849***		1.827***
		(21.48)		(21.48)		(21.49)		(20.38)
Momentum		-0.279***		-0.249**		-0.185*		-0.422***
		(2.63)		(2.37)		(1.77)		(3.74)
Dispersion		0.000		0.000		0.000		0.000
		(0.33)		(0.32)		(0.33)		(0.29)
Intercept	7.887***	6.807***	7.858***	6.854***	7.865***	6.743***	7.550***	7.175***
	(76.95)	(9.87)	(77.70)	(9.94)	(78.40)	(9.76)	(62.27)	(10.17)
Good Times $\hat{Y}$	7.887	7.644	7.858	7.612	7.865	7.588	7.550	7.483
#Obs	406644	334974	406644	334974	406644	334974	388570	318887
Adj R-Sq	0.0014	0.0631	0.0023	0.0641	0.0014	0.0636	0.0018	0.0647
Industry F.E.	No	Yes	No	Yes	No	Yes	No	Yes

Table IAXI
Cross-Sectional Analyst Characteristic Tests of CAR Impact of Recommendation Changes in Bad Times

In this table we regress analyst recommendation change CAR on bad times dummies with interactions for analyst/broker-related characteristics. Bad times measures and control variables are described in Table IAI. The characteristic dummies are defined as follows. *BigBroker* equals one for those in top quintile based on analysts issuing ratings in the prior quarter. *StarAnalyst* equals one if the analyst is an All-American in the most recent *Institutional Investor* polls. *HighExperience* equals one for the top quintile based on number of quarters in I/B/E/S. *HighPriorInflu* equals one if the analyst is in the highest quintile based on the fraction of influential recommendation changes in the prior year. *Underwriter* equals one if the broker does not state explicitly online that it is an independent broker (i.e., no underwriting business). *HighAnaComp* equals one if the number of analysts in the industry divided by the total industry market cap in the prior quarter is in the highest quintile. Control variables are estimated in the even specifications but the coefficients are not reported. Control variables related to the analyst characteristic dummies are removed when appropriate, for example, the experience control is removed when we examine interactions with *HighExperience*. *t*-statistics (in absolute values and based on standard errors clustered by calendar day) are in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels respectively. Industry fixed effects (F.E.) use the Fama and French (1997) 30-industry classification.

Variable	Dependent Variable: CAR of Downgrades								Dependent Variable: CAR of Upgrades							
	Crisis		Credit Crisis		Recession		High Uncertainty		Crisis		Credit Crisis		Recession		High Uncertainty	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Panel A: Big Brokers Interacted with Bad Times																
BadTimes	-0.841***	-0.803***	-1.089***	-1.159***	-1.035***	-0.940***	-0.558***	-0.649***	0.446***	0.429***	0.677***	0.754***	0.970***	0.866***	0.343***	0.427***
	(5.32)	(4.31)	(6.30)	(5.68)	(6.50)	(5.13)	(5.67)	(5.66)	(3.31)	(2.82)	(4.67)	(4.81)	(3.85)	(2.97)	(3.53)	(3.81)
BigBroker	-0.776***	-0.858***	-0.787***	-0.871***	-0.777***	-0.871***	-0.851***	-0.944***	0.694***	0.887***	0.719***	0.915***	0.727***	0.923***	0.772***	0.954***
	(13.05)	(12.33)	(13.14)	(12.25)	(12.87)	(12.06)	(12.17)	(11.59)	(11.68)	(11.41)	(12.24)	(11.87)	(14.56)	(15.47)	(10.39)	(9.75)
BadTimes×BigBroker	-0.316	-0.244	-0.338	-0.288	-0.211	-0.125	0.116	0.109	0.389**	0.247	0.264	0.103	0.077	-0.070	-0.102	-0.061
	(1.51)	(1.05)	(1.56)	(1.19)	(1.07)	(0.58)	(0.92)	(0.79)	(2.11)	(1.12)	(1.29)	(0.41)	(0.27)	(0.20)	(0.89)	(0.46)
Good Times Ŷ	-1.719	-1.793	-1.714	-1.775	-1.692	-1.770	-1.627	-1.665	2.079	2.175	2.064	2.149	2.020	2.123	2.013	2.081
#Obs	70287	59196	70287	59196	70287	59196	68578	57850	66759	56601	66759	56601	66759	56601	64863	55098
Adj R-Sq	0.0058	0.0188	0.0066	0.0201	0.0065	0.0190	0.0044	0.0185	0.0047	0.0416	0.0051	0.0422	0.0062	0.0423	0.0037	0.0412
Panel B: Star Analysts Interacted with Bad Times																
BadTimes	-0.990***	-1.001***	-1.295***	-1.456***	-1.169***	-1.046***	-0.448***	-0.516***	0.606***	0.655***	0.820***	0.976***	0.916***	0.785***	0.278***	0.417***
	(8.39)	(7.38)	(10.95)	(11.64)	(10.58)	(8.33)	(6.38)	(6.50)	(5.81)	(4.91)	(7.04)	(6.27)	(8.34)	(5.82)	(4.57)	(6.10)
StarAnalyst	-0.503***	-0.176**	-0.556***	-0.227***	-0.516***	-0.194**	-0.376***	-0.107	0.266***	0.061	0.319***	0.112	0.207***	0.005	0.315**	0.156
	(6.76)	(2.15)	(7.47)	(2.74)	(7.16)	(2.39)	(4.54)	(1.16)	(2.66)	(0.44)	(3.23)	(0.82)	(3.21)	(0.06)	(2.47)	(0.94)
BadTimes×StarAnalyst	-0.113	0.025	0.400	0.580**	0.153	0.200	-0.466***	-0.292*	0.139	-0.113	-0.409*	-0.708***	0.563	0.354	-0.051	-0.235
	(0.43)	(0.10)	(1.43)	(2.16)	(0.55)	(0.75)	(2.88)	(1.81)	(0.58)	(0.44)	(1.66)	(2.59)	(0.89)	(0.54)	(0.31)	(1.35)
Good Times Ŷ	-1.687	-1.761	-1.680	-1.737	-1.662	-1.751	-1.656	-1.709	2.045	2.138	2.034	2.117	2.012	2.125	2.022	2.076
#Obs	71087	59524	71087	59524	71087	59524	69368	58176	67436	56908	67436	56908	67436	56908	65527	55402
Adj R-Sq	0.0031	0.0199	0.0038	0.0213	0.0039	0.0199	0.0020	0.0194	0.0014	0.0432	0.0018	0.0440	0.0031	0.0439	0.0007	0.0427
Panel C: High Experienced Analysts Interacted with Bad Times																
BadTimes	-0.958***	-0.990***	-1.226***	-1.411***	-1.139***	-1.024***	-0.449***	-0.533***	0.583***	0.624***	0.734***	0.885***	0.991***	0.881***	0.183***	0.341***
	(7.57)	(6.76)	(9.69)	(10.25)	(9.80)	(7.66)	(5.98)	(6.34)	(5.29)	(4.61)	(6.08)	(5.86)	(6.62)	(5.37)	(2.71)	(4.50)
HighExperience	0.043	0.058	0.021	0.030	0.026	0.050	0.087	0.099	-0.125**	-0.102*	-0.116**	-0.083	-0.103**	-0.073	-0.219***	-0.167**
	(0.71)	(0.91)	(0.35)	(0.47)	(0.42)	(0.77)	(1.27)	(1.36)	(2.29)	(1.67)	(2.13)	(1.37)	(2.01)	(1.32)	(3.40)	(2.30)
BadTimes×HighExperience	-0.139	-0.032	-0.053	0.126	-0.038	0.023	-0.196	-0.135	0.128	0.066	0.122	-0.029	-0.022	-0.171	0.314***	0.226*
	(0.64)	(0.14)	(0.23)	(0.52)	(0.18)	(0.10)	(1.50)	(0.98)	(0.72)	(0.35)	(0.63)	(0.14)	(0.10)	(0.74)	(2.74)	(1.90)
Good Times Ŷ	-1.692	-1.762	-1.687	-1.742	-1.666	-1.754	-1.656	-1.703	2.048	2.142	2.044	2.126	2.003	2.113	2.057	2.103
#Obs	71087	59524	71087	59524	71087	59524	69368	58176	67436	56908	67436	56908	67436	56908	65527	55402
Adj R-Sq	0.0024	0.0197	0.0031	0.0211	0.0033	0.0198	0.0012	0.0193	0.0012	0.0428	0.0015	0.0435	0.0028	0.0435	0.0005	0.0424
Controls, Ind. F.E.	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

Table IAXI (Cont'd)

Variable	Dependent Variable: CAR of Downgrades								Dependent Variable: CAR of Upgrades							
	Crisis		Credit Crisis		Recession		High Uncertainty		Crisis		Credit Crisis		Recession		High Uncertainty	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Panel D: High Prior Influential Interacted with Bad Times																
BadTimes	-0.952***	-1.056***	-1.084***	-1.338***	-0.998***	-1.005***	-0.465***	-0.531***	0.518***	0.563***	0.674***	0.825***	0.886***	0.802***	0.127*	0.282***
	(8.38)	(8.42)	(9.01)	(10.20)	(8.69)	(7.55)	(6.32)	(6.65)	(4.65)	(4.07)	(5.57)	(5.41)	(5.58)	(4.81)	(1.81)	(3.58)
HighPriorInflu	-0.432***	-0.086	-0.400***	-0.045	-0.369***	-0.025	-0.575***	-0.171*	0.755***	0.371***	0.760***	0.382***	0.778***	0.400***	0.684***	0.346***
	(5.24)	(1.00)	(4.36)	(0.47)	(4.06)	(0.26)	(5.76)	(1.65)	(10.10)	(4.77)	(10.31)	(4.98)	(10.88)	(5.52)	(7.64)	(3.69)
Bad Times×HighPriorInflu	-0.601	-0.067	-1.233***	-0.630*	-1.071***	-0.573*	0.168	0.201	0.136	0.121	0.177	0.074	-0.019	-0.104	0.189	0.054
	(1.38)	(0.15)	(3.28)	(1.74)	(3.08)	(1.74)	(0.83)	(0.98)	(0.58)	(0.49)	(0.67)	(0.27)	(0.07)	(0.36)	(1.25)	(0.36)
Good Times Ŷ	-1.763	-1.813	-1.770	-1.810	-1.755	-1.816	-1.729	-1.770	2.157	2.239	2.148	2.223	2.113	2.213	2.184	2.217
#Obs	55211	48094	55211	48094	55211	48094	53966	47036	52872	46287	52872	46287	52872	46287	51447	45088
Adj R-Sq	0.0038	0.0216	0.0048	0.0232	0.0049	0.0218	0.0018	0.0204	0.0031	0.0442	0.0035	0.0450	0.0045	0.0448	0.0023	0.0436
Panel E: Brokers with Underwriting Business Interacted with Bad Times																
BadTimes	-0.595***	-0.756***	-0.849***	-1.179***	-0.924***	-0.940***	-0.002	-0.042	0.729***	1.000***	0.838***	1.110***	0.838***	0.717***	-0.167	0.035
	(3.07)	(3.01)	(4.47)	(4.97)	(4.65)	(3.86)	(0.02)	(0.23)	(4.19)	(4.81)	(4.71)	(5.19)	(4.43)	(3.09)	(1.41)	(0.22)
Underwriter	-0.681***	0.040	-0.730***	-0.019	-0.716***	0.023	-0.462***	0.287**	0.856***	0.083	0.867***	0.080	0.802***	-0.028	0.548***	-0.214*
	(8.60)	(0.39)	(9.05)	(0.17)	(9.11)	(0.21)	(4.57)	(2.19)	(13.00)	(0.91)	(13.20)	(0.88)	(12.53)	(0.32)	(6.40)	(1.89)
BadTimes×Underwriter	-0.690***	-0.327	-0.780***	-0.311	-0.412*	-0.137	-0.711***	-0.592***	0.060	-0.405*	0.162	-0.245	0.314	0.161	0.664***	0.407**
	(3.02)	(1.17)	(3.38)	(1.13)	(1.73)	(0.50)	(4.52)	(3.04)	(0.30)	(1.69)	(0.75)	(0.92)	(1.27)	(0.53)	(5.01)	(2.40)
Good Times Ŷ	-1.803	-1.826	-1.790	-1.799	-1.756	-1.797	-1.888	-1.921	2.104	2.139	2.107	2.148	2.095	2.179	2.254	2.257
#Obs	65999	56519	65999	56519	65999	56519	64738	55488	62684	54001	62684	54001	62684	54001	61207	52799
Adj R-Sq	0.0044	0.0197	0.0055	0.0212	0.0051	0.0197	0.0032	0.0193	0.0034	0.0426	0.0040	0.0433	0.0051	0.0432	0.0030	0.0421
Panel F: Analyst Competition Interacted with Bad Times																
BadTimes	-0.896***	-0.914***	-1.167***	-1.320***	-1.054***	-0.929***	-0.432***	-0.506***	0.625***	0.673***	0.783***	0.918***	0.963***	0.823***	0.252***	0.362***
	(7.81)	(6.96)	(10.06)	(10.56)	(9.68)	(7.56)	(6.27)	(6.67)	(6.00)	(5.18)	(6.79)	(6.15)	(7.07)	(5.46)	(4.08)	(5.30)
HighAnaComp	0.069	0.184	0.019	0.169	0.032	0.129	0.132	0.229*	0.161**	0.103	0.166**	0.090	0.130*	0.059	0.122	-0.002
	(0.82)	(1.58)	(0.22)	(1.43)	(0.39)	(1.12)	(1.41)	(1.77)	(2.00)	(0.96)	(2.08)	(0.85)	(1.72)	(0.57)	(1.25)	(0.01)
BadTimes×HighAnaComp	-0.841***	-0.788***	-0.628**	-0.594**	-1.057***	-1.054***	-0.636***	-0.551***	-0.128	-0.344	-0.204	-0.407	0.253	0.139	0.059	0.180
	(3.09)	(2.69)	(2.20)	(2.02)	(3.46)	(3.40)	(3.58)	(2.84)	(0.54)	(1.28)	(0.81)	(1.42)	(0.77)	(0.39)	(0.37)	(1.07)
Good Times Ŷ	-1.701	-1.773	-1.695	-1.752	-1.679	-1.767	-1.663	-1.714	2.045	2.137	2.041	2.125	2.009	2.122	2.034	2.098
#Obs	70961	59448	70961	59448	70961	59448	69242	58100	67308	56823	67308	56823	67308	56823	65399	55317
Adj R-Sq	0.0026	0.0200	0.0032	0.0213	0.0035	0.0201	0.0014	0.0195	0.0011	0.0432	0.0015	0.0439	0.0028	0.0438	0.0004	0.0427
Controls, Ind. F.E.	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

Table IAXII
Panel Regression of Recommendation Change CARs in Bad Times with Control for Analyst Busyness

In this table we estimate panel regressions of the effect of bad times on recommendation downgrade and upgrade two-day CARs (in percent) controlling for recommendation, firm, and analyst characteristics. The new control added is a proxy for busy analysts, in particular, Log *Firms Per Analyst* is the log of one plus the number of firms covered by the analyst in the prior year. Bad times measures and control variables are described in Table IAI. Bad times measures and control variables are described in Table IAI. *t*-statistics (in absolute values and based on standard errors clustered by calendar day) are in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels respectively. Industry fixed effects (F.E.) use the Fama and French (1997) 30-industry classification.

Variable	Dependent Variable: CAR of Downgrades								Dependent Variable: CAR of Upgrades							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Crisis	-0.991***	-1.002***							0.614***	0.660***						
	(9.14)	(7.95)							(6.15)	(5.45)						
Credit Crisis			-1.239***	-1.389***							0.764***	0.901***				
			(11.31)	(11.69)							(6.87)	(6.51)				
Recession					-1.148***	-1.019***							0.989***	0.852***		
					(11.08)	(8.59)							(7.63)	(6.08)		
High Uncertainty							-0.495***	-0.558***							0.261***	0.380***
							(7.55)	(7.70)							(4.40)	(5.81)
LFR		-0.036***		-0.036***		-0.035***		-0.033**		0.026***		0.025***		0.025***		0.025***
		(2.81)		(2.81)		(2.75)		(2.54)		(3.12)		(3.11)		(3.08)		(2.94)
Star Analyst		-0.180**		-0.183**		-0.171**		-0.204**		0.080		0.081		0.076		0.107
		(2.22)		(2.26)		(2.11)		(2.48)		(0.61)		(0.61)		(0.57)		(0.80)
Relative Experience		-0.007***		-0.007***		-0.007***		-0.007***		0.010***		0.010***		0.010***		0.009***
		(4.02)		(3.94)		(3.95)		(3.84)		(6.19)		(6.15)		(6.18)		(5.79)
Accuracy Quintile		-0.233***		-0.232***		-0.239***		-0.224***		0.289***		0.283***		0.288***		0.293***
		(3.51)		(3.49)		(3.60)		(3.33)		(4.18)		(4.08)		(4.18)		(4.15)
Log Broker Size		-0.485***		-0.494***		-0.476***		-0.481***		0.509***		0.514***		0.502***		0.508***
		(14.93)		(15.39)		(14.79)		(14.66)		(14.11)		(14.12)		(14.23)		(14.01)
Log # Analysts		0.214***		0.200***		0.233***		0.292***		-0.497***		-0.488***		-0.499***		-0.522***
		(2.83)		(2.64)		(3.07)		(3.77)		(8.16)		(8.02)		(8.18)		(8.46)
Log Size		0.223***		0.237***		0.226***		0.206***		-0.369***		-0.377***		-0.380***		-0.359***
		(8.60)		(9.39)		(8.98)		(8.01)		(15.28)		(15.64)		(14.85)		(14.74)
Log BM		0.135***		0.145***		0.132***		0.162***		0.047		0.043		0.045		0.033
		(3.04)		(3.27)		(2.96)		(3.62)		(1.23)		(1.13)		(1.19)		(0.84)
Momentum		-0.125*		-0.130**		-0.155**		-0.095		-0.163***		-0.160***		-0.135***		-0.175***
		(1.90)		(1.96)		(2.32)		(1.42)		(3.02)		(2.95)		(2.60)		(3.20)
Stock Volatility		-20.853***		-20.431***		-19.359***		-22.773***		27.131***		26.810***		24.980***		29.014***
		(7.91)		(7.86)		(7.23)		(8.70)		(7.76)		(7.71)		(7.60)		(8.16)
Log Firms Per Analyst		0.038		0.055		0.020		-0.030		-0.191***		-0.198***		-0.185***		-0.156***
		(0.63)		(0.91)		(0.34)		(0.51)		(3.98)		(4.12)		(3.75)		(3.12)
Intercept	-1.687***	-2.204***	-1.686***	-2.375***	-1.665***	-2.314***	-1.638***	-1.868***	2.044***	5.582***	2.041***	5.684***	2.003***	5.792***	2.029***	5.290***
	(55.18)	(5.04)	(54.70)	(5.51)	(54.31)	(5.40)	(45.55)	(4.36)	(68.19)	(13.61)	(68.76)	(13.85)	(72.06)	(13.44)	(52.86)	(12.56)
Good Times Ŷ	-1.687	-1.761	-1.686	-1.744	-1.665	-1.754	-1.638	-1.693	2.044	2.137	2.041	2.125	2.003	2.116	2.029	2.089
#Obs	71070	59511	71070	59511	71070	59511	69351	58163	67425	56901	67425	56901	67425	56901	65516	55395
Adj R-Sq	0.0024	0.0199	0.0032	0.0213	0.0033	0.0199	0.0012	0.0194	0.0011	0.0434	0.0015	0.0441	0.0028	0.0441	0.0004	0.0428
Industry F.E.	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

Table IAXIII

Analyst Attrition in Bad Times, Using the Earnings Forecasts Sample

In this table we uses the earnings forecasts sample (1983 to 2014) instead of the recommendations sample to estimate the effect of bad times on analyst attrition probability. Variables are averaged within each analyst-quarter. *Disappear* equals one when the analyst makes no forecast in I/B/E/S in the next two quarters. Forecast *Accuracy Quintile* is the average accuracy quintile of the analyst across all covered stocks. The bad times indicator equals one if any month in the next quarter contains a relevant bad times period. Bad times measures and control variables are described in Table IAI. Bad times measures and control variables are described in Table IAI. *t*-statistics (in absolute values and based on standard errors clustered by analyst) are in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels respectively.

Variable	Dependent Variable: Forecasts Sample, Disappear From I/B/E/S Next Two Quarters							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crisis	0.015*	0.022**						
	(1.67)	(2.57)						
Credit Crisis			0.016	0.027***				
			(1.54)	(2.59)				
Recession					-0.000	0.001		
					(0.03)	(0.13)		
High Uncertainty							-0.006	0.002
							(1.18)	(0.36)
Accuracy Quintile	-0.013***	-0.012***	-0.013***	-0.012***	-0.014***	-0.013***	-0.015***	-0.013***
	(14.71)	(13.88)	(14.91)	(14.06)	(15.19)	(14.47)	(12.27)	(10.99)
Crisis×Accuracy Quintile	-0.003	-0.004						
	(0.96)	(1.48)						
Credit Crisis×Accuracy Quintile			-0.004	-0.006*				
			(1.35)	(1.87)				
Recession×Accuracy Quintile					0.003	0.002		
					(1.18)	(0.98)		
High Uncertainty×Accuracy Quintile							0.002	0.001
							(1.47)	(0.36)
LFR		0.000		0.000		0.000		0.000
		(0.56)		(0.57)		(0.60)		(0.71)
Relative Experience		-0.001***		-0.001***		-0.001***		-0.001***
		(12.46)		(12.46)		(12.44)		(12.42)
Log Broker Size		-0.005***		-0.005***		-0.005***		-0.005***
		(7.53)		(7.50)		(7.56)		(7.42)
Log Size		-0.003***		-0.003***		-0.003***		-0.003***
		(7.07)		(7.12)		(7.33)		(7.22)
Log BM		-0.007***		-0.007***		-0.007***		-0.007***
		(7.32)		(7.42)		(7.36)		(7.75)
Momentum		-0.008***		-0.008***		-0.008***		-0.009***
		(6.43)		(6.39)		(6.20)		(6.55)
Stock Volatility		0.169***		0.171***		0.130***		0.175***
		(4.31)		(4.35)		(3.16)		(4.44)
Predicted Prob.	0.065	0.053	0.065	0.053	0.065	0.053	0.065	0.053
#Obs	206726	188681	206726	188681	206726	188681	206726	188681

Table IAXIV
Analyst Report Length in Bad Times

The list of all U.S. analyst company reports issued by Morgan Stanley from 1994 to 2014 is downloaded from Thomson ONE (until September 2011) and Thomson Eikon (from October 2011 onwards). We then remove all observations that occur within three trading days centered around an earnings announcement or earnings guidance date. Earnings announcement dates are from Compustat and guidance dates are from First Call Guidelines and I/B/E/S Guidance. The number of pages in each report is regressed against a bad times dummy and control variables. Bad times measures and control variables are described in Table IAI. Bad times measures are described in Table IAI. *Beta* is the stock's market beta based on three years of past monthly returns. *Size Quintile* is based on the stock's market cap in the prior June using NYSE breakpoints. *Momentum Quintile* is based on the month *t*–12 to *t*–2 buy-and-hold stock return sorted in month *t*–1. *BM Quintile* is based on the firm's book-to-market ratio. *Stock Volatility* is the month *t*–1 volatility of daily stock returns. *Earnings Annc Dummy* (*Guidance Dummy*) indicates that the analyst report is issued within three trading days of an earnings announcement (earnings guidance). Earnings announcement dates are from Compustat and guidance dates are from First Call Guidelines and I/B/E/S Guidance. *t*-statistics (in absolute values and based on standard errors clustered by the date of the analyst report) are in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels respectively. Industry fixed effects (F.E.) use the Fama and French (1997) 30-industry classification.

Variable	Dependent Variable: Number of Pages in an Analyst Report							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crisis	1.436***	1.633***						
	(6.40)	(7.43)						
Credit Crisis			2.434***	2.416***				
			(10.51)	(10.17)				
Recession					-0.866***	-0.201		
					(4.72)	(1.12)		
High Uncertainty							1.726***	1.730***
							(13.42)	(14.58)
Beta		0.379***		0.365***		0.385***		0.385***
		(7.32)		(7.08)		(7.38)		(7.22)
Size Quintile		0.112***		0.115***		0.108***		0.108***
		(3.15)		(3.25)		(3.03)		(3.02)
Momentum Quintile		-0.146***		-0.144***		-0.124***		-0.123***
		(4.79)		(4.72)		(4.06)		(4.01)
BM Quintile		0.082**		0.081**		0.086**		0.103***
		(2.47)		(2.43)		(2.57)		(3.05)
Stock Volatility		-67.067***		-66.519***		-64.570***		-65.102***
		(21.12)		(21.18)		(19.94)		(20.76)
Intercept	10.111***	11.150***	10.083***	11.122***	10.292***	11.146***	9.463***	10.372***
	(151.82)	(47.39)	(153.18)	(47.42)	(151.42)	(47.35)	(115.14)	(41.89)
Good Times $\hat{Y}$	10.111	10.094	10.083	10.081	10.292	10.222	9.463	9.459
#Obs	53469	52952	53469	52952	53469	52952	51536	51039
Adj R-Sq	0.0020	0.0466	0.0045	0.0484	0.0011	0.0441	0.0112	0.0560
Industry F.E.	No	Yes	No	Yes	No	Yes	No	Yes

Table IAXV
Signed Forecast Error in Bad Times

In this table we estimate panel regressions of the effect of bad times on an analyst's signed forecast error. This table is exactly similar to Table IAX except that the numerator of the dependent variable is signed instead of absolute forecast error. Forecast error is actual minus forecasted earnings, divided by the absolute value of actual earnings (models (1)-(8)) (denominators less than $0.25 are set to $0.25), or divided by the daily stock return volatility (annualized) in the month before the forecast (models (9)-(16)). Forecast errors are winsorized at the extreme 1%. Bad times measures and control variables are described in Table IAI and Table IAX, respectively, except that the *Optimistic Forecast* indicator is dropped since it is collinear with forecast bias. *t*-statistics (in absolute values and based on standard errors clustered by industry-quarter) are in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels respectively. Industry fixed effects (F.E.) use the Fama and French (1997) 30-industry classification.

Variables	Dependent Variable: Forecast Bias (Actual-Forecast) Scaled by Absolute Value of Actual Earnings								Dependent Variable: Forecast bias (Actual-Forecast) Scaled by Stock Volatility							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Crisis	-0.374	0.049							-1.941***	-1.403**						
	(0.75)	(0.10)							(2.85)	(2.17)						
Credit Crisis			-0.218	0.115							-1.401*	-1.101				
			(0.38)	(0.21)							(1.84)	(1.54)				
Recession					-0.644	0.237							-3.983***	-2.885***		
					(1.35)	(0.50)							(5.97)	(4.45)		
High Uncertainty							0.816***	0.443*							1.998***	0.926*
							(3.14)	(1.74)							(3.71)	(1.78)
LFR		0.169***		0.169***		0.169***		0.173***		0.096***		0.095***		0.096***		0.100***
		(9.47)		(9.42)		(9.49)		(9.55)		(2.91)		(2.90)		(2.88)		(2.99)
Star Analyst		-1.050***		-1.048***		-1.047***		-1.074***		-1.165***		-1.157***		-1.174***		-1.209***
		(7.27)		(7.25)		(7.22)		(7.40)		(3.92)		(3.89)		(3.96)		(4.18)
Relative Experience		0.005**		0.005**		0.005**		0.005**		0.003		0.003		0.003		0.004
		(2.21)		(2.20)		(2.20)		(2.00)		(0.56)		(0.56)		(0.57)		(0.70)
Accuracy Quintile		-0.293***		-0.293***		-0.292***		-0.297***		-0.428**		-0.427**		-0.440**		-0.377**
		(3.14)		(3.14)		(3.13)		(3.13)		(2.35)		(2.35)		(2.42)		(2.07)
Log Days to Annc		-0.705***		-0.705***		-0.706***		-0.756***		-1.189***		-1.195***		-1.184***		-1.266***
		(8.83)		(8.81)		(8.83)		(9.28)		(7.79)		(7.82)		(7.77)		(8.09)
Mutiple Forecast Day		-0.407***		-0.406***		-0.409***		-0.392***		-1.347***		-1.348***		-1.317***		-1.278***
		(3.41)		(3.41)		(3.42)		(3.18)		(5.74)		(5.75)		(5.61)		(5.35)
Log Broker Size		0.769***		0.769***		0.767***		0.781***		1.249***		1.246***		1.266***		1.176***
		(10.46)		(10.46)		(10.42)		(10.25)		(9.44)		(9.41)		(9.58)		(8.88)
Log # Analysts		1.961***		1.964***		1.975***		1.936***		1.545**		1.584**		1.429**		1.717***
		(6.57)		(6.59)		(6.65)		(6.29)		(2.47)		(2.54)		(2.29)		(2.86)
Log Size		0.509***		0.507***		0.505***		0.493***		3.227***		3.221***		3.253***		2.944***
		(5.88)		(5.87)		(5.86)		(5.50)		(13.57)		(13.54)		(13.72)		(13.05)
Log BM		-0.276*		-0.275*		-0.270*		-0.380**		0.680**		0.692**		0.627**		0.545*
		(1.85)		(1.84)		(1.80)		(2.45)		(2.29)		(2.32)		(2.12)		(1.82)
Momentum		2.765***		2.770***		2.793***		2.841***		5.056***		5.092***		4.783***		5.213***
		(11.88)		(11.92)		(12.50)		(11.87)		(12.66)		(12.73)		(11.94)		(12.94)
Dispersion		-0.000		-0.000		-0.000		-0.000		0.000		0.000		0.000		0.000
		(0.12)		(0.12)		(0.12)		(0.12)		(0.08)		(0.09)		(0.07)		(0.07)
Intercept	0.813***	-11.866***	0.792***	-11.864***	0.860***	-11.875***	0.382**	-11.728***	5.918***	-44.772***	5.833***	-44.795***	6.252***	-44.664***	4.469***	-41.649***
	(6.04)	(10.91)	(5.96)	(10.92)	(6.51)	(10.91)	(2.48)	(10.50)	(19.10)	(15.55)	(19.10)	(15.55)	(19.82)	(15.57)	(13.34)	(14.60)
Good Times Ŷ	0.813	1.237	0.792	1.231	0.860	1.209	0.382	1.012	5.918	6.652	5.833	6.599	6.252	6.898	4.469	5.664
#Obs	406644	334974	406644	334974	406644	334974	388570	318887	406642	334973	406642	334973	406642	334973	388568	318886
Adj R-Sq	0.0000	0.0109	0.0000	0.0109	0.0001	0.0109	0.0002	0.0113	0.0002	0.0226	0.0001	0.0225	0.0008	0.0229	0.0004	0.0211
Industry F.E.	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

Table IAXVI
Response of Peer Firms to Recommendation Changes in Bad Times

In this table we estimate panel regressions of estimate the effect of recommendation changes on peer firms' two-day CARs (in percent) during bad times, controlling for recommendation, firm, and analyst characteristics. Peer firms are firms in the same industry that did not experience a recommendation by the same analyst that day but for which the analyst has issued a recommendation in the prior year. For each recommendation change, the associated peer firm CARs are equal-weighted. The CAR benchmark is a characteristics-matched DGTW portfolio for the peer firm. The sample is from 1993 to 2014. Recommendation changes are the current rating minus the analyst's prior outstanding rating (initiations and reiterations are excluded). Recommendation changes made around earnings announcement and guidance days, and changes on multiple-recommendation days, are excluded (following Loh and Stulz (2011)). Bad times measures and control variables are described in Table IAI. *t*-statistics (in absolute values and based on standard errors clustered by calendar day) are in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels respectively. Industry fixed effects (F.E.) use the Fama and French (1997) 30-industry classification.

Variable	Dependent Variable: CAR of Peer Firms of Downgrades								Dependent Variable: CAR of Peer Firms of Upgrades							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Crisis	-0.104*	-0.105*							-0.021	-0.042						
	(1.78)	(1.71)							(0.36)	(0.73)						
Credit Crisis			-0.131**	-0.153**							-0.046	-0.077				
			(2.09)	(2.32)							(0.67)	(1.20)				
Recession					-0.163**	-0.196**							0.020	-0.052		
					(2.44)	(2.54)							(0.31)	(0.84)		
High Uncertainty							-0.035	-0.019							-0.034	-0.028
							(0.96)	(0.47)							(1.10)	(0.92)
LFR		0.001		0.001		0.001		0.000		0.007*		0.007*		0.007*		0.006
		(0.19)		(0.19)		(0.21)		(0.07)		(1.69)		(1.69)		(1.70)		(1.57)
Star Analyst		-0.040		-0.040		-0.040		-0.040		0.079**		0.078**		0.079**		0.076**
		(0.86)		(0.86)		(0.87)		(0.84)		(2.09)		(2.09)		(2.10)		(1.97)
Relative Experience		-0.001		-0.001		-0.001		-0.001		-0.000		-0.000		-0.000		0.000
		(0.78)		(0.76)		(0.72)		(1.08)		(0.08)		(0.07)		(0.08)		(0.15)
Accuracy Quintile		0.005		0.005		0.005		0.001		-0.014		-0.013		-0.014		-0.014
		(0.13)		(0.13)		(0.12)		(0.02)		(0.38)		(0.36)		(0.38)		(0.39)
Log Broker Size		-0.041***		-0.042***		-0.040**		-0.041**		0.024*		0.024*		0.025*		0.029**
		(2.61)		(2.69)		(2.56)		(2.56)		(1.80)		(1.74)		(1.83)		(2.08)
Log # Analysts		-0.040		-0.042		-0.042		-0.030		0.063**		0.062**		0.064**		0.065**
		(1.46)		(1.52)		(1.53)		(1.10)		(2.50)		(2.42)		(2.51)		(2.53)
Log Size		0.000		0.002		0.005		-0.004		-0.000		0.001		0.000		-0.002
		(0.04)		(0.19)		(0.41)		(0.37)		(0.04)		(0.08)		(0.02)		(0.19)
Log BM		-0.006		-0.005		-0.006		-0.009		0.017		0.017		0.017		0.017
		(0.34)		(0.28)		(0.35)		(0.48)		(1.04)		(1.06)		(1.05)		(1.05)
Momentum		-0.040*		-0.041*		-0.049**		-0.036*		-0.042**		-0.043**		-0.044**		-0.041**
		(1.84)		(1.88)		(2.25)		(1.68)		(2.10)		(2.14)		(2.18)		(2.01)
Stock Volatility		-1.190		-1.124		-0.590		-1.634		3.681***		3.761***		3.808***		3.488***
		(1.02)		(0.96)		(0.47)		(1.41)		(3.53)		(3.61)		(3.68)		(3.18)
Intercept	-0.054***	0.185	-0.053***	0.169	-0.045***	0.122	-0.059***	0.247	0.110***	-0.171	0.112***	-0.183	0.105***	-0.185	0.122***	-0.155
	(3.37)	(0.91)	(3.34)	(0.84)	(3.04)	(0.60)	(3.68)	(1.19)	(8.74)	(1.08)	(8.92)	(1.15)	(8.50)	(1.17)	(8.20)	(0.96)
Good Times Ŷ	-0.054	-0.066	-0.053	-0.063	-0.045	-0.053	-0.059	-0.077	0.110	0.120	0.112	0.123	0.105	0.121	0.122	0.127
#Obs	68725	58670	68725	58670	68725	58670	67111	57357	65482	56238	65482	56238	65482	56238	63670	54765
Adj R-Sq	0.0002	0.0017	0.0002	0.0019	0.0005	0.0022	0.0000	0.0017	-0.0000	0.0020	0.0000	0.0021	-0.0000	0.0020	0.0000	0.0020
Industry F.E.	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

Table IAXVII
Calendar-Time Portfolio of One-Month Recommendation Drift Conditional on Bad Times

In this table we form daily rebalanced calendar-time portfolios in response to recommendation changes or earnings forecast revisions from October 31, 1993 to December 31, 2014. Each day, a downgrade portfolio (Panel A), upgrade portfolio (Panel B), downward revision portfolio (Panel C), and upward revision portfolio (Panel D) are formed. A change/revision is defined as an analyst's current rating/forecast minus their prior outstanding rating/forecast (initiations and reiterations are excluded) and changes/revisions made around earnings announcement and guidance days, and those on multiple-rating/forecast days, are excluded. Each portfolio puts one dollar in to each change/revision starting on trading day 2 of the event and holds the position up to day 21, that is, a one-month drift. The weight in the stock changes according to its holding period return following Barber, Lehavy, and Trueman (2007). The daily returns of the portfolio are cumulated into monthly returns and regressed on the Carhart (1997) four factors plus a dummy for bad times. Bad times measures are defined in Table IAI. The bad times dummy is also interacted with the four factors to allow factor exposures to vary with market conditions. The intercept and coefficient on the bad times dummies are reported in percent per month. *, **, and *** represents statistical significance at the 10%, 5%, and 1% respectively with *t*-statistics in parentheses. All *t*-statistics (signed) are based on a null hypothesis that the coefficient is equal to zero except for the MktRf coefficient where the null is one.

Bad Times Measure	Intercept (%)	Bad Times	MktRf	SMB	HML	UMD	Bad×MktRf	Bad×SMB	Bad×HML	Bad×UMD	Adj R-Sq	#Mths
Panel A: Downgrades												
Crisis	-0.672***	0.392	1.096***	0.525***	0.016	-0.262***	-0.001	0.122	-0.019	0.212***	0.9293	247
	(-5.73)	(1.05)	(3.10)	(14.98)	(0.39)	(-11.56)	(-0.02)	(0.77)	(-0.17)	(2.98)		
Credit Crisis	-0.674***	0.592	1.091***	0.525***	0.018	-0.262***	0.101	0.273	-0.159	0.283***	0.9316	247
	(-5.93)	(1.43)	(3.13)	(15.41)	(0.46)	(-11.91)	(1.34)	(1.42)	(-1.24)	(3.69)		
Recession	-0.654***	0.734**	1.077**	0.528***	0.036	-0.234***	0.151**	-0.084	-0.277***	0.039	0.9295	247
	(-5.59)	(1.99)	(2.55)	(14.59)	(0.89)	(-8.80)	(2.04)	(-0.71)	(-3.08)	(0.72)		
High Uncertainty	-0.623***	0.020	1.075*	0.510***	-0.013	-0.265***	0.017	0.092	-0.028	0.101**	0.9275	244
	(-4.24)	(0.09)	(1.86)	(12.96)	(-0.26)	(-10.07)	(0.31)	(1.03)	(-0.36)	(2.05)		
Panel B: Upgrades												
Crisis	0.568***	-0.116	1.105***	0.507***	0.252***	-0.132***	0.025	-0.092	-0.613***	0.042	0.9000	247
	(4.26)	(-0.27)	(2.99)	(12.74)	(5.53)	(-5.15)	(0.35)	(-0.51)	(-4.91)	(0.52)		
Credit Crisis	0.608***	-0.301	1.114***	0.494***	0.236***	-0.131***	0.120	0.223	-0.802***	0.117	0.9017	247
	(4.67)	(-0.63)	(3.42)	(12.68)	(5.27)	(-5.21)	(1.38)	(1.01)	(-5.46)	(1.33)		
Recession	0.556***	0.737*	1.115***	0.482***	0.267***	-0.094***	0.097	-0.095	-0.600***	-0.026	0.9021	247
	(4.22)	(1.77)	(3.40)	(11.86)	(5.81)	(-3.13)	(1.17)	(-0.72)	(-5.93)	(-0.44)		
High Uncertainty	0.709***	-0.206	1.103**	0.439***	0.203***	-0.133***	-0.009	0.227**	-0.205**	0.091	0.8933	244
	(4.17)	(-0.77)	(2.20)	(9.64)	(3.42)	(-4.36)	(-0.14)	(2.18)	(-2.27)	(1.59)		

Table IAXVII (Cont'd)

Bad Times Measure	Intercept (%)	Bad Times	MktRf	SMB	HML	UMD	Bad×MktRf	Bad×SMB	Bad×HML	Bad×UMD	Adj R-Sq	#Mths
Panel C: Downward Revisions												
Crisis	-0.483***	-0.226	1.170***	0.459***	0.231***	-0.244***	-0.058	0.097	-0.338**	0.039	0.8849	353
	(-3.83)	(-0.50)	(5.22)	(11.55)	(5.07)	(-9.23)	(-0.80)	(0.55)	(-2.46)	(0.46)		
Credit Crisis	-0.509***	-0.041	1.181***	0.455***	0.232***	-0.246***	0.005	0.448*	-0.441***	0.164*	0.8868	353
	(-4.19)	(-0.08)	(6.12)	(11.73)	(5.19)	(-9.58)	(0.05)	(1.80)	(-2.68)	(1.65)		
Recession	-0.548***	0.621	1.181***	0.456***	0.251***	-0.238***	0.035	0.017	-0.348***	0.051	0.8867	353
	(-4.38)	(1.61)	(5.90)	(11.20)	(5.48)	(-7.83)	(0.43)	(0.13)	(-3.17)	(0.81)		
High Uncertainty	-0.565***	0.317	1.150***	0.425***	0.186***	-0.275***	0.008	0.195**	-0.030	0.152***	0.8874	350
	(-3.74)	(1.29)	(3.62)	(9.67)	(3.32)	(-9.04)	(0.14)	(1.99)	(-0.35)	(2.84)		
Panel D: Upward Revisions												
Crisis	0.717***	0.019	1.120***	0.389***	0.224***	-0.054*	-0.121	-0.304	-0.459***	0.133	0.8140	353
	(4.92)	(0.04)	(3.18)	(8.48)	(4.25)	(-1.77)	(-1.46)	(-1.48)	(-2.89)	(1.36)		
Credit Crisis	0.812***	-0.333	1.084**	0.378***	0.203***	-0.068**	0.165	-0.024	-0.704***	0.349***	0.8183	353
	(5.80)	(-0.54)	(2.48)	(8.46)	(3.95)	(-2.31)	(1.50)	(-0.08)	(-3.72)	(3.07)		
Recession	0.810***	0.255	1.068*	0.366***	0.209***	-0.026	0.099	-0.174	-0.535***	-0.014	0.8108	353
	(5.52)	(0.56)	(1.89)	(7.65)	(3.88)	(-0.74)	(1.04)	(-1.13)	(-4.15)	(-0.19)		
High Uncertainty	0.811***	0.036	1.147***	0.299***	0.137**	-0.057	-0.190***	0.318***	-0.014	0.079	0.8097	350
	(4.54)	(0.13)	(3.00)	(5.75)	(2.07)	(-1.59)	(-2.84)	(2.74)	(-0.14)	(1.25)		

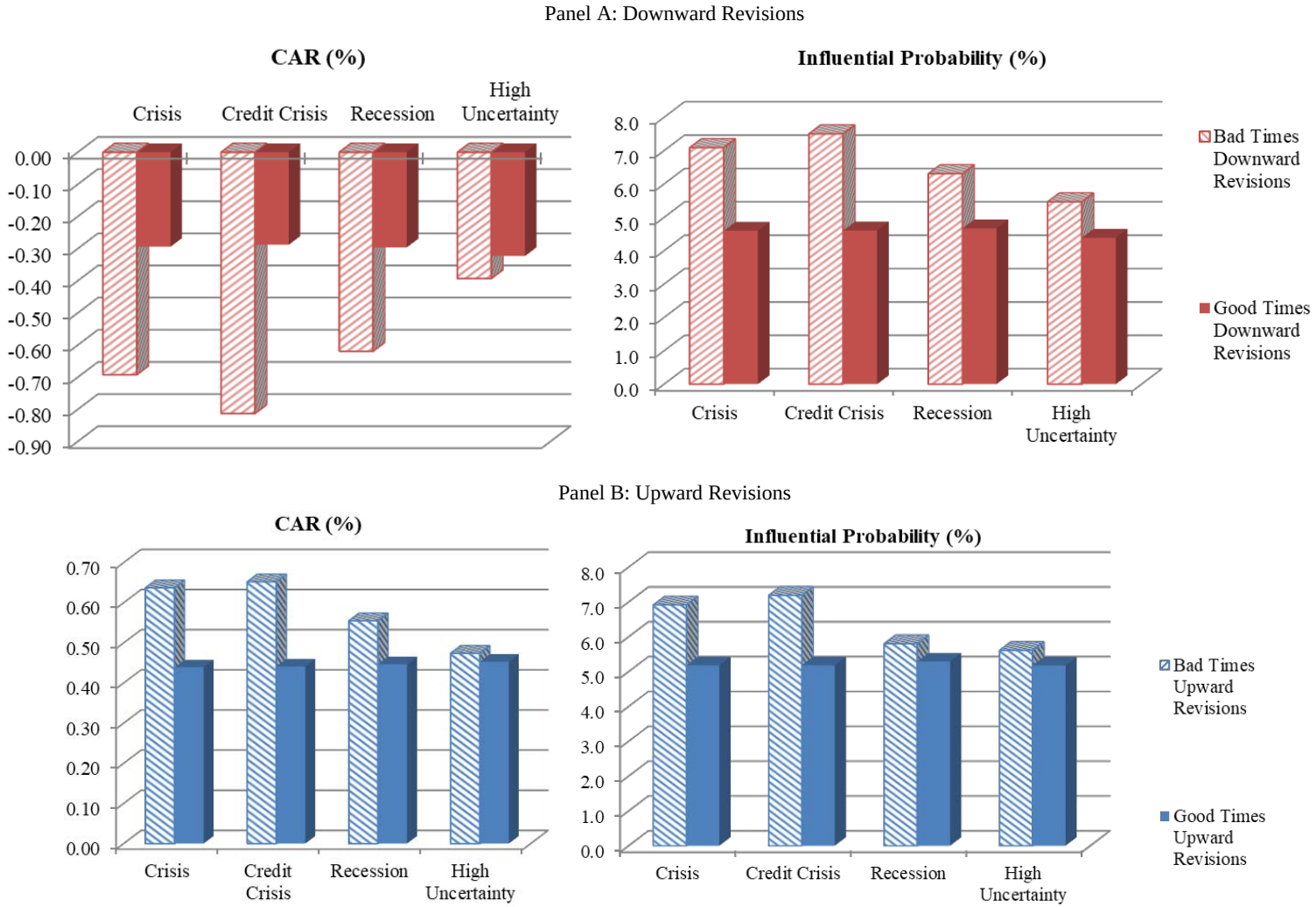

Figure IA1: Impact of earnings forecast revisions in bad times. The figure plots the mean two-day CAR and the influential probability of earnings forecast revisions (in percent). Panel A (Panel B) reports the evidence for downward revisions (upward revisions). The benchmark return for the CAR is the return from a characteristics-matched DGTW portfolio. The sample is from 1983 to 2014. A forecast revision is the analyst's current one-quarter-ahead earnings forecast minus their prior outstanding forecast (i.e., initiations are excluded) scaled by price. Revisions made around earnings announcement and guidance days, and revisions on multiple-forecast days, are excluded. Influential revisions are those whose two-day CARs are in the same direction as the revision and is 1.96 times larger than expected based on the prior three-month idiosyncratic volatility of the stock (following Loh and Stulz (2011)). Bad times measures are as follows. *Crisis*: September to November 1987 (1987 crisis), August to December 1998 (LTCM), and July 2007 to March 2009 (*Credit Crisis*). *Recession* (NBER recessions): July 1990 to March 1991, March to November 2001, and December 2007 to June 2009. *High Uncertainty* represents the highest tercile (over the period 1983 to 2014) of the Baker, Bloom, and Davis (2016) uncertainty index.