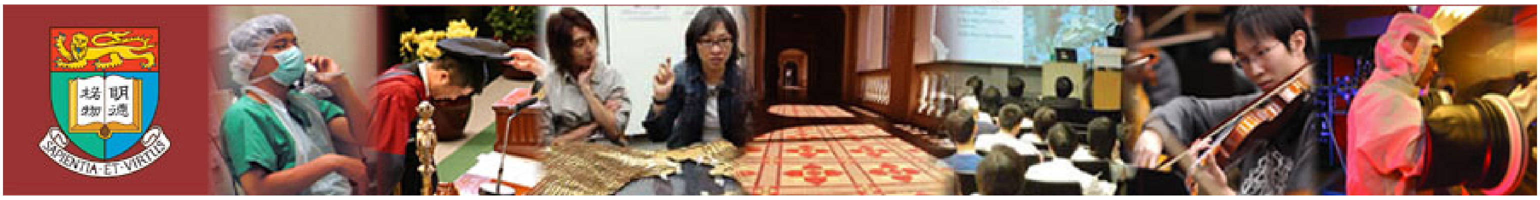

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Less is More When Analysts Report Bad News

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Less is More When Analysts Report Bad News

Abstract

This study documents the existence of a positive-negative asymmetry in analysts' consensus earnings forecast revisions. We find that upward revisions are more informative than downward revisions. After controlling for momentum, extreme downward revisions contain little incremental information compared with moderate downward revisions. The differential richness of information set in good and bad news revisions is more pronounced among bigger, more heavily covered stocks and stocks with higher institutional holding, i.e. stocks typically are more prone to the analyst agency problem. These findings are consistent with the claim that analysts systematically struggle with bad news reporting as conflicts are exacerbated with bad news but are attenuated with good news.

1. Introduction

This study examines whether the richness of the information set differs across the upward and downward consensus earnings forecast revisions[1]. We are motivated by analysts' role as agent acting on behalf of multiple principals (Fisch & Sale, 2002). As analyst principal-agent conflicts are generally attenuated with good news but exacerbated with bad news, analysts systematically struggle with bad news. To report or not to report, and if yes, what and when to report might no longer be a straightforward function of analysts' true views alone, but a much more complex decision that may also include many other often conflicting considerations. We hypothesize that this asymmetric principal-agent conflict dynamics could give rise to the loss of information in analysts' downward forecast revisions, especially among stocks that conflicts are expected to be the most severe.

An extant literature examined the information content of analysts' individual and consensus earnings forecast revisions using the criteria of association between forecast revisions and future abnormal stock returns[2](Givoly & Lakonishok, 1979; Lys & Sohn, 1990; Stickel, 1991). Two main stylized facts have emerged[3]. First, forecast revisions, both their direction and magnitude, do convey price sensitive information. Second, the price reaction to the disclosure of analysts' forecasts is relatively slow and gradual. Indeed, the post-revision price drift is now widely acknowledged as a general class of earnings momentum strategy where expectations of future earnings are proxied by revisions in analyst earnings forecasts (Chan, Jegadeesh, & Lakonishok, 1996).

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[1] Unless otherwise specified, in this paper we use "analyst revisions", "forecast revisions", or simply "revisions" to refer to analysts' consensus earnings forecast revisions.

[2] Following literature, we use "informativeness", "value relevance", "usefulness" and "return association" interchangeably referring to the quality or richness of the information in analysts' earnings forecast revisions.

[3] See Ramnath, Rock and Shane (2008) for a good review.

While previous studies collectively provide robust evidence that analyst forecast revisions are indeed informative, the question that whether they are equally informative across good and bad news is rarely attempted. The limited evidences presented so far are mixed. Frankel, Kothari and Weber (2006) do touch upon the topic. They find that analysts' bad news forecast revisions are more informative than good news revisions and conclude that market has greater foreknowledge of the information in analysts' positive forecast revisions. In a separate stream of literature on manager disclosure, it is commonly believed that bad news manager forecasts/guidance are more credible and hence more informative (Anilowski, Feng, & Skinner, 2007; Hutton, Miller, & Skinner, 2003) and managers accelerate bad news disclosures due to litigation concerns (Skinner & Sloan, 2002; Soffer, Thiagarajan, & Walther, 2000). Since manager disclosure is an important information source for analysts, these papers could also suggest greater informativeness in analysts' downward earnings forecast revisions, apparently at odds with our prediction.

However, other related studies support our conjecture, though indirectly. Prior studies document asymmetric analyst behaviors when recommending stocks. Analysts tend to herd more for downgrades (Jegadeesh & Kim, 2010); analysts are more likely to downgrade post large price declines which alleviate some pressure on analysts to withhold bad news (Conrad, Cornell, Landsman, & Rountree, 2006). Such asymmetric behavior could result in some loss of information in analysts' downgrades after negative price jumps (Jiang & Kim, 2010). On earnings forecasts, Gu and Xue (2008) find that when economic incentive misalignment is alleviated by analyst independence the marginal improvement in analyst forecast informativeness is greater for bad news. These evidences do not directly prove that good news revisions are unconditionally more informative, but they point to the same general direction of our prediction and support the agency story that is at the root of our asymmetry conjecture. Given the ambiguous evidences and predictions from past studies, we think the asymmetric price reaction after upward and downward revisions warrants closer scrutiny.

Since Jegadeesh and Titman (1993), it is now well known that stock return is predictable based on past stock returns. If analysts simply mimic past price actions to revise earnings forecasts, their revisions will necessarily appear informative; but the *incremental* information attributable to analysts is minimal as past price action is already publicly available. Indeed, the positive association between prior price changes and analyst forecast revisions[4] has been documented as early as Givoly and Lakonishok (1979) and Brown, Foster and Noreen (1985). Abarbanell (1991) argue that such association does not necessarily mean forecasts explicitly depend upon prior price changes and analysts' forecasts contain more of their private signal. Chan et al. (1996) provide a detailed analysis on the interactions of price momentum and earning momentum and conclude that neither effect subsumes the other. In sum, past studies suggest analysts' revisions are *incrementally* informative overall. However, is this overall incremental informativeness largely driven by the upward revisions? We address this question directly and predict less informativeness incremental to preceded public signals in large downward revisions.

We calculate revision (REV_t) as the month-on-month change in consensus earnings forecast scaled by stock price in the last month. Excluding zero revisions, our entire sample is dichotomized into upward (REV^+) and downward revisions (REV^-). Within each group, each month, we sort stocks into quartiles from low to high based on REV_t and form eight portfolios in total, four in REV^- (P1 to P4) and four in REV^+ (P6 to P9). To provide some quick intuition, we first search and document four asymmetric and/or systematic patterns in our revisions data. We find that, first, the positive autocorrelation in REV^- appear more evident than that in REV^+, confirming the intuition that analysts respond more sluggishly to

4 Positive association is also found between past stock returns and analyst revisions in target price. Firms that receive an upward (downward) revision in *target price* behave like other "winner" ("loser") firms (Brav & Lehavy, 2003). Conrad et al. (2006) also suggest analyst stock recommendation is closely related to prior stock price actions at least in bad news.

bad news. Second, the positive association between past return and revision is much stronger in REV^- than that in REV^+, consistent with our prediction that downward revisions might not contain as much information beyond momentum as upward revisions do. Third, the positive relationship between revision and future stock return is only visually observable in REV^+ indicating asymmetric information quality. Interestingly, after we adjust for stock characteristics including momentum, the revision and subsequent stock return relation is reversed at the extreme downward revision stocks, which yield but slightly *higher* excess returns than those received moderate negative revisions. Though quick and dirty, these visual evidences provide a preview of our key findings – the unconditional asymmetric informativeness across good and bad news revisions and the inferior quality of information in larger vs. smaller downward revisions conditional on prior price actions. Finally, compared with those with moderate revisions, stocks which receive extreme revisions, upward or downward, tend to be younger, smaller, with lower prices, lighter analyst coverage and lower institutional holdings. It appears that they are inherently more volatile and/or analysts have more discretion over them (hence bolder revisions).

The profitability of a long/short trading strategy based on sorting by REV_t also exhibits significant asymmetry across upward (REV^+) and downward (REV^-) revisions over the period of January 1983 to March 2008. In REV^+, the top quartile (P9) consistently outperforms the bottom quartile (P6) in the month after portfolio formation. The one-month raw and various risk-adjusted return differences are economically and statistically significant at well over 100bp. The outperformance is robust to alternative definitions of REV_t, characteristic-based benchmarks for estimating abnormal returns and longer holding periods. In particular, the return premium of high revision stocks among upward revisions lasts for at least 12 months and no return reversal is observed, suggesting this is likely driven by information rather than noise. Echoing early studies, we confirm that upward revisions are indeed informative.

On the contrary, in REV^-, the differences in both raw return and Fama-French three factors adjusted return between the top quartile (P4) and the bottom quartile (P1) are not significantly different from zero in the one month after portfolio formation, indicating that the *magnitude* of downward revisions does not seem to convey much information. The differences in differences, (P9-P6) – (P4-P1), are significantly positive, suggesting upward revisions are significantly more informative. More importantly, after we further adjust for the momentum factor, the return difference (P4-P1) turned significantly negative at -46bp. Specifically, the Carhart four-factor adjusted return of P4 (least negative) is significantly negative at -30bp while that of P1 (most negative) is not significantly different from zero. It seems that when analysts are bold enough to heavily revise down a company's earnings forecast, very likely they are simply stating the obvious that has already reflected in the past price movements. Therefore, while smaller negative revisions seem incrementally informative, larger downward revisions might not be. "Less is more; and more is not better" when it comes to analysts' bad news revisions.

We have been arguing that such asymmetric return predictability is driven by the underlying agency problem; but it might also be due to the systematic differences in firm characteristics between extreme and moderate revisions stocks observed earlier. We rule out this alternative possibility with a series of Fama-Macbeth regressions and demonstrate that the asymmetry in the return explanatory power across REV^+ and REV^- is not subsumed by a host of well-documented return anomalies including size, growth, idiosyncratic risk, institutional holding, age and many other relevant firm characteristics.

Moreover, if the "Less is more, more is not better" effect in bad news revisions is indeed driven by the underlying agency problem, it should be more pronounced among stocks that the conflicts are expected to be most severe. We conduct double sort tests on REV_t and four firm characteristic variables that proxy for the degree of conflicts, size, turnover, analyst coverage and institutional holding. Indeed, we find that the good-bad asymmetry is more pronounced among bigger, more liquid stocks, more heavily covered stocks and stocks with higher institutional holdings. This is because these firms tend to be banks' important clients and trading in these stocks is likely the main source of sales commission revenues for analysts' employers. This finding lends strong support to our hypothesis that the observed differential informativeness in good and bad news revisions is driven by analyst agency problem.

Finally, we take a more structural approach to cross-check our earlier results. Controlling for size, BM ratio and momentum, we regress three-month ($RET3_{t,\ t+2}$) and six-month returns ($RET6_{t,\ t+5}$), on REV_{t-1}, a dummy variable BAD_{t-1} that equals 1 if REV_{t-1} is negative and 0 if REV_{t-1} is positive and an interactive term between the two (BAD_REV_{t-1}) in cross-section. The time-series average coefficients of BAD_{t-1} are significantly negative suggesting that the *direction* of downward revisions is informative. The average coefficients of REV_{t-1} are significantly positive while those of REV_BAD_t are significantly negative. The coefficients of REV_{t-1} and REV_BAD_t are of similar magnitude, indicating "More is indeed more" with good news while "More is not better" with bad news in analysts' revisions. In augmented model specifications, we add, one by one, three three-way interactive terms defined as REV_BAD_{t-1} multiples firm characteristic variables. We consider three firm characteristic variables that proxy for the severity of conflicts of interest: *SIZE*, institutional holding (*INST*) and analyst coverage (*NUMEST*). As expected, the coefficients of these interaction terms are significantly negative, the "Less is more" effect is more pronounced among stocks that are particularly prone to the analyst agency problem. These findings agree with our double-sort results and together they help to disentangle our agency story from two competing explanations, 1) managers' asymmetric disclosure behavior - managers release bad news less promptly (Kothari, Shu, & Wysocki, 2009) and less precisely (Hutton, et al., 2003; Skinner, 1994), coupled with managers' incentives to give analysts early access to positive inside information (Ivkovic & Jegadeesh, 2004); 2) "negative differentiation" - bad news might be systematically more complex and differentiated than good news (Rozin & Royzman, 2001). These two competing explanations cannot explain why the asymmetry is more pronounced in bigger, more heavily covered stocks with higher institutional holding. The totality of our results supports our agency story and is less consistent with these competing explanations.

Our paper contributes to the literature with a number of new findings. We provide evidence of a general asymmetry in the market's reaction to the magnitude of analysts' good and bad news forecast revisions that the information quality in analysts' bad news revisions is inferior; we demonstrate that after controlling for momentum, extreme downward revisions contain little incremental information compared with moderate downward revisions – "Less is more and more is not better". More importantly, we provide a compelling interpretation that is analysts systematically struggle with bad news reporting as conflicts are exacerbated with bad news but are attenuated with good news. We provide evidence that asymmetry is more pronounced among bigger, more heavily covered stocks and stocks with higher institutional holding – stocks typically are more prone to the analyst agency problem. Our findings reiterate that analyst forecasts, especially the bad news revisions, are colored by their incentives and may not be a clean measure of market earnings expectation. Also, analyst-revision-based stock ranking has been a popular technique used by investment managers. Traders and investors might be able to enhance their existing revision-based strategy by being more selective on informative revisions. Last but not least, our paper highlights the import of recent regulatory reforms on analyst behavior and suggests policies put particular emphasis on how analysts disseminate bad news.

The remainder of the paper is organized as follows. In Section 2, we discuss related literature and develop our hypothesis. Section 3 describes our data and methodology. Section 4 presents and discusses our main empirical results. Section 5 concludes.

2. Hypothesis Development and Related Literature

Acting as agents on behalf of multiple principals including their employers, issuers, and investors (Fisch & Sale, 2002), analysts are more likely to be caught in the conflicts of interests when they have bad news to report. With good news, things are nice and easy. Analyst revises earnings forecast upwards according to her true expectation and thus investors' interest is served; company is glad to see its share price responses favorably to analyst's upward revision; and bank reaps higher sales commission from increased trading in the stock and enjoys better investment banking revenue prospect due to improved client relationship; all thanks to the bullish call of analyst who also expects to be rewarded accordingly. With good news, analysts can speak out more freely as economic incentives are well aligned.

In contrast, tensions intensify when the going gets tough. Downward earnings forecast revisions can be devastating for analyst/bank's relationship with the company, an important source of information for analyst and perhaps also an investment banking client for bank. Bearish calls do not help sales either because trading commissions are typically generated by institutional clients' long transactions. While investors demand information as always, analysts struggle with negative reports. To report or not to report, and if yes, what and when to report might no longer be a straightforward function of analysts' true views alone, but more of a complex decision that may also include many other often conflicting considerations. We hence hypothesize that such asymmetric behavior could potentially give rise to the loss of information in analysts' downward forecast revisions, especially among stocks that conflicts are expected to be most severe, a classic agent cost.

Surprisingly, there is only limited study examine specifically the question that whether analysts earnings forecast revisions are equally informative across good and bad news revisions. Frankel et al. (2006) is a notable exception. They authors find that bad news analyst forecasts are more informative than good news revisions. This is at odds with our prediction. There are three potential causes of this discrepancy. First, Frankel et al. (2006)'s good news (GNEWS[5]) variable might be noisy as it solely depends on the relative frequency of upward vs. downward revisions within a year. It does not incorporate information in the size of each revision. Furthermore, averaging over one year also makes it hard to capture the sign of analysts' reports timely. Second, their Analyst Informativeness (AI) measure might not adequately differentiate signal and noise. It resembles more a variance measure. AI is defined as the average absolute value of a firm's stock one-day price reaction to analysts' revisions in a given year. Third, the short event window of price reaction does not incorporate the well-documented post-revision price shift. Likely, the subsequent price shift in the same direction of the revision is driven by the same information in the original signal. On the other hand, in case any price reversal is observed post revision, the initial price reaction may be more noise than information.

Several other related papers however support our conjecture to varied degree. Conrad et al. (2006) find that following large stock price declines, analysts are more likely to downgrade stock recommendation as the price declines alleviate some pressure on analysts to withhold negative news. While following large stock price increases, they are equally likely to upgrade or downgrade. They attribute the asymmetry to "a stickiness in the downgrades that is the result of a conflict of interest." Jegadeesh and Kim (2010) document that analysts tend to herd more for downgrades since they are typically reluctant to be negative on a stock. These findings support our claim that the asymmetric dynamics of analyst conflicts in good and bad news lead to asymmetric analyst behavior. Both papers however did not examine if similar asymmetry can also be found when analysts revise earnings forecasts. Gu and Xue (2008) find that when economic incentive misalignment is alleviated by analyst independence the marginal improvement in analyst earnings forecast informativeness is greater for bad

[5] GNEWS is an indicator variable equals to one if the number of positive revision dates exceeds the number of negative revision dates in firm-year, and zero otherwise.

news. Jiang and Kim (2010) find that the incremental value of recommendation upgrades after positive stock price jumps is more pronounced than that of downgrades after negative jumps. The findings of these two papers lends further albeit indirect support to our argument that such asymmetric behavior could lead to potential loss of information. However these evidences alone do not necessarily prove that good news revisions are unconditionally more informative.

Hong et al. (2000) demonstrate convincingly that bad news travels slowly as managers tend to withhold bad news (Kothari, et al., 2009). Our analyst agency story bode well with this finding as analysts' reluctance to downgrade and/or downward revise could well be contributing to the sluggish diffusion of bad news. On the other hand, based on analysts' information intermediary role, analysts could be likely to play a more significant role in the dissemination of bad news. This argument predicts greater informativeness in downward earnings forecast revisions, opposite to our prediction.

Our hypothesis of the asymmetric market reaction to good and bad news analyst forecast revisions is based on analysts' incentive structure. There are also competing explanations. First, it could be driven by managers' asymmetric disclosure behavior. Managers release bad news less promptly (Kothari, et al., 2009) and less precisely (Hutton, et al., 2003; Skinner, 1994); managers have stronger incentives to give analysts early access to positive inside information (Ivkovic & Jegadeesh, 2004). Second, as "Happy families are all alike; every unhappy family is unhappy in its own way", bad news might be systematically more complex and differentiated than good news; it could be due to the so-called "negative differentiation"[6] (Rozin & Royzman, 2001). In order to disentangle our agency story from the alternative interpretations, it is important to test if the asymmetry differs in different partitions of stocks,. Based on our agency story, such asymmetry should be more pronounced among stocks that conflicts are expected to be the most severe, e.g. bigger, more heavily covered stocks with higher institutional

[6] Negative entities are more varied, yield more complex conceptual representations, and engage a wider response repertoire.

holdings. On the other hand, based on both alternative stories we do not expect to see greater asymmetry in these firms. It's unlikely that managers of these more "established" and more closely "monitored" firms should behave worse. Bigger firms' news, good or bad, might be generally more complex but it does not necessarily mean that differential complexity between good and bad news of these firms should also be greater.

Given the ambiguous evidences, predictions and interpretations from past studies, we think the asymmetric price reaction after upward and downward revisions warrants closer scrutiny.

3. Data and Methodology

Our data come from three primary sources. The stock return and turnover data are from the CRSP Monthly Stocks Combined File, which includes NYSE, AMEX and NASDAQ stocks. Following literature, we only include common stocks, i.e. stocks with a CRSP share type code of 10 or 11. Analyst forecast data are from the I/B/E/S Forecast Historical Unadjusted Detailed File, and are available on a monthly basis from 1983. The accounting information is from Compustat. Our sample period is January 1983 to March 2008.

3.1 Consensus Forecast Revisions (REV)

Due to the precision problem related to stock-split adjustment in I/B/E/S standard Summary[7] File (Payne & Thomas, 2003), we replicate Summary File's MEANEST statistic, the consensus forecasts, from I/B/E/S unadjusted individual forecasts. The lower precision in the adjusted data could potentially overstate the percentage of observations with zero revisions and lead to loss of information. Closely following the procedures suggested by WRDS, every third week of each month, we select individual

[7] Our main results however remain qualitatively the same when we use the standard summary file.

forecasts pertain to the same firm and fiscal year one (FY1) from the Detailed File to be included in the sample used to compute the consensus forecast. These individual forecasts must also: (1) be issued within three months prior to consensus formation; (2) not be voided by I/B/E/S with an "Excluded" or "Stopped" flag; (3) be the latest estimate issued by a broker.

We then calculate consensus revision (REV_t) as the month-on-month change in consensus forecasts scaled by stock price in the last month. Stocks in the top and bottom 1% of the REV_t variable in any given month are deleted to limit the effect of outliers[8]. Our revision sample is divided into two groups with REV^+ containing upward revisions and REV^- containing downward revisions. Within each group, each month, we sort stocks into quartiles from low to high based on REV_t and form nine portfolios in total – four in REV^- (P1-P4), four in REV^+ (P6-P9) and one (P5) with zero revisions.

INSERT TABLE [1]

Table 1 provides descriptive information on our sample revisions. Panel A reports various distributional statistic measures of revisions, as well as the percentage of upward, downward and zero revisions in each size deciles. Size deciles are defined based on AMEX/NYSE size breakpoint in any given month. Panel B and C report the same statistics by number of months to fiscal year-end and by momentum deciles. Four observations emerge from Table 1. (1) There are a large portion of zero revisions each month; (2) Revision distributions are generally skewed toward negative, consistent with the notion that analysts "walk down to beatable earnings expectations". (3) Revisions are not evenly distributed over time, but are concentrated around reporting months. (4) The direction and magnitude of revisions are closely related to past price actions and thus might contain overlapping information.

[8] All our results nevertheless remain significant and conclusions unchanged with the sample including the extremes.

3.2 *Stock Characteristics and Autocorrelation across REV+ and REV-*

To provide some quick intuition, we first search for any systematic and/or asymmetric patterns in our revision sample. We investigate REV's association with various stock characteristics and report the properties of each of the nine (P1-P9) REV portfolios in Panel A of Table 2. We find that stocks which receive extreme revisions, upward or downward, tend to be younger, smaller, with lower price, less analyst coverage and institutional holding compared with moderate revisions stocks. It appears that these stocks are inherently more volatile and/or analysts have more discretion over (hence bolder revisions). This finding raises a valid concern that some early studies might not have adequately adjusted for risk and characteristics that are now known to predict future returns. Also, stocks in P5 with zero revisions, i.e. those with no change in average analyst earning expectation, tend to be smaller, younger and neglected by analysts and institutional investors. In most of the following analysis, we exclude stocks in P5.

INSERT TABLE [2]

Givoly and Lakonishok (1979) points out that the consensus revision necessarily change gradually over time due to the lag between the first revision and the "followers" and find significant positive serial dependence in over 90% of the firms in their sample. We reckon that bad news would provide extra incentives, even for those capable ones, to lag their fellow analysts. Every year and for each stock, we separately estimate the upward autocorrelation (Rho^{UP}) between positive REV_{t-1} and REV_t and the downward autocorrelation (Rho^{DOWN}) between negative REV_{t-1} and REV_t, using a rolling window of four years. A minimum of 20 data points is required to estimate a meaningful correlation. The average Rho^{UP} and Rho^{DOWN} across all stocks from 1984 to 2005 are plotted in Panel A of Figure 1. Indeed, Rho^{DOWN} appear to be clearly more positive than Rho^{UP}, confirming the intuition that analysts respond to bad news relatively more sluggishly. This finding is also consistent with Conrad et al. (2006) on analysts' recommendation changes are "sticky" in one direction, with analysts reluctant to downgrade.

The pressure to withhold bad news is not uniform across all stocks. It is likely that analysts may find more difficult to report bad news for stocks of larger firms, heavily covered firms with higher institutional holding and hence more pronounced asymmetry in auto-correlation. Each year we divide all stocks into two groups with heavy or light coverage based on the median number of analyst providing earnings estimates in June. Similarly, we also assign each stock to low- or high- institutional holding groups based on variable *INST* median and big or small groups based on AMEX/NYSE size median. Panel B, C and D of Figure 1 plot the time series average of the Spearman Rho^{UP} and Rho^{DOWN} by size, analyst coverage and institutional holding groups. Figure 1 confirms that the auto-correlation, especially Rho^{DOWN}, is more positive in larger and heavily covered stocks and stocks with higher institutional holding, consistent with that analysts find it especially difficult to report bad news fully and timely when the involved company deem "important" for banks' business.

INSERT Figure [1]

Past studies have also persistently documented a positive association between the sign and magnitude of analyst forecast revisions and those of prior stock returns, e.g. Brown, Foster and Noreen (1985) (BFN) and Givoly and Lakonishok (1979). We observe an asymmetry across REV^+ and REV^- in this relationship. Panel A in Figure 2 plots the average past six-month cumulative stock returns of the eight portfolios in REV^+ (P1-P4) and REV^- (P6-P9), demonstrating that revision's positive relation with momentum is visibly stronger in REV^- than that in REV^+. Panel B shows an X/Y scatter plot of the average revisions vs. momentum for each revision class, where the larger downward revisions seem more closely correlated with past stock returns. Hwang, Li and Tong (2011) use one minus the correlations between forecast revisions and prior stock returns (1-ρ) to proxy for production of private information and find that analysts with lower correlations are better information producers. Thus the visual evidences in Figure 2 have led us to conjecture that downward revisions might not contain as much incremental information beyond momentum as upward revisions do. When analysts (heavily) revise down earnings forecast, it is more likely that, as BFN commented, “All they are doing is re-expressing, in earnings forecast format, the information already available in publicly observable datum such as security price”.

INSERT Figure [2]

To closely examine the revision-moment association in good and bad news and supplement the visual evidence, we run several Fama-Macbeth style regressions and report the time-series average of the coefficient and t-statistics in Panel B of Table 2. In the first set of regressions, good or bad news is determined by if past stock return (*MOM*) outperform median. Regressions of *REV* on *MOM* are run among good and bad news stocks separately. We then pool the good and bad news stocks with an additional explanatory variable, an interactive term (*MOM_BAD)*. In the second set of regressions, good or bad news is determined by the sign of revisions. Therefore, we regress *MOM* on *REV* in good and bad news stocks separately, and on *REV* and *REV_BAD* in pooled sample. In both sets of regressions, the coefficient of the interactive terms are significantly positive, indicating the positive association between momentum and revisions are significantly stronger when news is good than otherwise.

The various asymmetric patterns observed are thus far encouraging and together they seem to suggest that quality of information especially that beyond momentum might differ across upward and downward revisions. As a quick confirmation to our conjecture, we examine an X/Y scatter plot of the average revisions vs. average subsequent 6-month cumulative stock returns for each of the nine revision class as presented in Panel C and D of Figure 2. In Panel C, the Y axis denotes raw returns while in Panel D it denotes the excess returns adjusted by market return, size, BM ratio and momentum. As predicted, both charts exhibit apparent asymmetry. In REV^+, there is a strong positive association between revision and future (both raw and excess) return. Yet no clear relationship is observable between revision and future raw return in REV^-. Interestingly, after we adjust for stock characteristics including momentum, the revision and subsequent stock return relation is reversed at the extreme downward revision stocks, which seem to yield even slightly *higher* excess returns than those received moderate negative revisions. Though quick and dirty, this piece of visual evidence confirms our key predictions – the unconditional asymmetric informativeness across good and bad news revisions and the inferior quality of information in large vs. small downward revisions conditional on prior price actions.

All the visual evidences provided in this section are important in shaping our hypothesis and they provide a preview of our main results. In the next section, we shall conduct various empirical tests to formally examine the association between revision and future stock returns.

4. Consensus Revisions and Abnormal Returns

In this section we formally test if the information quality of analysts' downward revisions, particularly of those extreme ones, is inferior to that of upward revisions. We perform tests using single- and double-sort approaches as well as cross-sectional regressions. We also show that our empirical results are robust to alternative REV definitions, characteristic-based benchmarks for estimating abnormal returns and sub-periods checks.

4.1 Returns of Quartiles Sorted by Revisions

In Table 4, we present the raw and excess returns of the nine REV portfolios (P1 – P9) in the one month, three and six months after portfolio formation throughout Panel A to C. We extend the holding periods beyond one month as market reaction to forecast revisions is slow and gradual. For example, for a three-month holding period strategy, each portfolio is held for 3 month so that in any given month there are effectively three cohorts of portfolio formed in the previous 3 months. We also show the returns of a zero-cost strategy that goes long P9 (P4) and goes short P6 (P1). Because REV_t is auto-correlated and our portfolios are overlapping for longer holding months, we correct the standard errors for auto-correlation using the Newey-West procedure[9] with the number of lags equals to the number of months that the portfolios are held.

INSERT TABLE [3]

We find that the profitability of a long/short trading strategy based on sorting by REV shows significant asymmetry across upward (REV^+) and downward (REV^-) revisions over the period of January 1983 to March 2008. In REV^+, both raw and abnormal returns pretty much monotonically increase across the REV quartiles. The top quartile (P9) outperforms the bottom quartile (P6) by 120bp in the first month after portfolio formation. After adjusted for market, size and book-to-market factors, we find that, stocks with the highest REV earn higher abnormal returns than stocks with the least REV in the first month post revision. The abnormal monthly return difference is significantly positive at 100bp. When the Carhart four-factor adjustments are used, the return differences remain economically and statistically significant at 116bp. Similar results are found when we extend the holding periods to three and six months. In un-tabulated tests, we find that the abnormal return difference between P9 and

[9] The high auto-correlation tends to over-state the abnormal return and leads to erroneous conclusions (Ball, 1978). All t-statistics in this paper are based on Newy-West standard errors.

P6 decrease as the holding periods extends, but they remain significant for at least 12 months with no sign of return reversal, suggesting this is likely driven by information rather than noise. Echoing earlier studies, we confirm that upward revisions are significantly informative.

On the contrary, in REV^-, the differences in both the raw returns and the Fama-French three factors adjusted returns between top quartile (P4) and the bottom quartile (P1) are not significantly different from zero in the month after portfolio formation, indicating that the magnitude of downward revisions does not seem to convey much information. Interestingly, after we further adjust for the momentum factor, the one-month return difference turned significantly negative at -46bp. Specifically, the Carhart four-factor adjusted return of P4 (least negative) is significantly negative at -30bp while that of P1 (most negative) is not significantly different from zero. It seems that when analysts are bold enough to heavily revise down a company's earnings forecast, very likely they are simply stating the obvious that has already reflected in the past price movements as large stock price declines alleviate some pressure on analysts to withhold negative news (Conrad, et al., 2006). Therefore, while smaller negative revisions are incrementally informative, extreme downward revisions might not be. "Less is more; and more is not better" when it comes to analysts' bad news revisions.

4.2 Cross-Sectional Return Predictability of REV and REV_BAD

Our single sort tests show an inverse relationship between the magnitude of downward revision and price reaction after controlling for momentum, different from the positive relationship in upward revisions. But this evidence alone might not necessarily attest that such asymmetry is due to analyst agency problem. It could well be driven by the systematic differences in firm characteristics between extreme revisions stocks and those with moderate revisions. This is a valid concern as the absolute magnitude of revision is indeed correlated with various stock characteristics as shown in Table 2.

Therefore, in this subsection we conduct cross-sectional tests to investigate the asymmetry in excess return predicative power across REV^+ and REV^- more rigorously.

To do so, we regress three-month cumulative stock return *RET3* from month *t* to *t+2* on one-month lagged REV_{t-1}, a dummy variable BAD_{t-1} that equals 1 if REV_{t-1} is negative and 0 if REV_{t-1} is positive, and an interactive term between the two ($REV\_ BAD_{t-1}$) along with various firm characteristic variables and conventional predictive variables for stock returns. $NASD_i$ is a dummy variable indicating if the stock of firm *i* is listed on NASDAQ. $NASD\_TO_i$ is NASD dummy[10] times firm turnover. As suggested by previous studies, we also include number of analyst reporting ($NUMEST_i$), share issuance ($ISSUE_i$) as per Pontiff and Woodgate (2008), accruals ($ACCRU_i$) as per Sloan (1996), number of years exist in CRSP (AGE_i) and idiosyncratic risk ($IVOL_i$). The regression is run each month and we report the average slope coefficients, intercepts, t-statistics and adjusted R^2 in Table 4.

INSERT TABLE [4]

Model (1) is our benchmark model specification. We consider lagged revision REV_{t-1} and REV_BAD_{t-1} together with three conventional expected return explanatory variables, logarithm of market capitalization (*SIZE*) book-to-market (*BM*) and momentum (*MOM*). The signs of coefficients on BM and MOM are consistent with previous literature although the size effect is not significant in our sample partly because our sample tend to be over-represented by larger firms which attract analyst coverage. As expected, the coefficient of REV_{t-1} is significantly positive, and the coefficient of REV_BAD_{t-1} is significantly negative and the two coefficients are of similar magnitude. Together these results indicate that “More is indeed more” with good news while “More is not better” with bad news in analysts’

[10] We also include the interactive term *NASD_TO* to allow for different coefficients on *TO* for stocks listed on NASDAQ due to the differences in market structure between NASDAQ and AMEX /NYSE as noted in Lee and Swaminathan (2000).

revisions. While the magnitude of bad news revisions does not appear to be informative, the coefficients of BAD_{t-1} *are* significantly negative indicating that their direction is nevertheless informative.

Models (2) to (10) present a "horse race" by considering separate estimations for share issuance (*ISSUE*), turnover (*TO*), idiosyncratic risk (*IVOL*), age (*AGE*), accrual (*ACCRU*), analyst coverage (*NUMEST*) and institutional holding (*INST*). The slope coefficients of REV_{t-1} remain significantly positive while that of REV_BAD_{t-1} remain significantly negative when these variables are added to our benchmark model (1) one by one. When a specification that includes all the above explanatory variables is considered in Model (11), the asymmetric pattern survives. Note that the sample size for Model (11) is necessarily much smaller due to data availability so we need to be cautious in interpreting the results from Model (11). Overall, we interpret these results as supportive of our hypothesis that the information quality of analysts' downward revisions is inferior. The asymmetry in stock return predictive power across good and bad news revisions is not captured by various known risk factors, relevant firm characteristics or return anomalies.

4.3 Returns of Quintiles Sorted by REV and Characteristics

Intuitively, if the "Less is more, more is not better" effect is indeed driven by the underlying analyst agency problem, it should be more pronounced among stocks that are most prone to the conflicts of interests in the complex analyst principal-agent relationships. The agency problem is exacerbated among stocks over which analysts have less discretion. As argued earlier, analysts may find more difficult to report bad news for hot stocks (high turnover), stocks of larger firms, and heavily covered firms with high institutional holding. This is because these firms tend to be their important banking clients and/or trading in these stocks is likely the main source of sales commission revenues for analysts' employers. We therefore consider six firm characteristic variables: logarithm of year-end market capitalization (*SIZE*), number of analysts reporting (*NUMEST)*, institutional holding (*INST*), turnover (*TO*), idiosyncratic risks (*IVOL*), number of years exist in CRSP (*AGE*) and inverse of price (*INVP*) in our double sorts tests.

Table 5 reports the raw and abnormal returns of stocks double-sorted by the above six characteristic variables and REV. Each month, we first sort stocks into 4 quartiles by characteristic, and then sort each characteristic-based quartile into two upward revisions portfolios based on REV_{t-1} from low to high (L^+ and H^+) and also two downward portfolios (L^- and H^-). The equal-weighted risk adjusted returns of each of these 16 (4 x 4) portfolios in the one month after portfolio formation and a trading strategy that go long on H^+ (H^-) and go short on L^+ (L^-) are then reported.

INSERT TABLE [5]

The results confirm our predictions. Asymmetry is more pronounced among larger stocks, more liquid stocks, stocks with higher institutional holdings and analyst coverage, and stocks with higher prices. For the upward revisions, all the excess return differences between H^+ (more positive) and L^+ (less positive) are significantly positive across all four characteristic quartiles; however for the downward revisions, H^- (less negative) generally do not outperform L^- (more negative) after risk adjustments except for the quartile with smallest stocks and least covered stocks. Interestingly, after further controlling for momentum, H^- (less negative) even significantly underperform L^- among the largest stocks, stocks with the highest institutional holdings, the most heavily covered stocks, and stocks with higher price and turnover. Furthermore, although the monthly Fama-French three-factor adjusted return of extreme downward revision portfolios are generally significantly negative, after further adjusting for momentum they are not significantly different from zero except for the smallest and least covered stocks. The momentum adjustment also reduces the moderate revision portfolios' excess returns which however generally remain significantly negative. For example, the one-month Carhart 4 factor adjusted return difference between H^- (less negative) and L^- (more negative) is significantly negative at -37bp among the largest quartile firms while it is significantly positive at 56bp among the smallest quartile. Less is more and more is not better!

Following Chan et al. (1996), we also perform double sorts by past returns and REV and summarize the results in Panel B. We find that the post revision drift is driven by good news revisions and is much more pronounced among the winners; momentum profits after controlling for revisions are only significant among the good news revisions; the return difference between H^- (less negative) and L^- (more negative) is significantly negative among the extreme performers and not significantly different from zero among the average performers. These evidences are consistent with earlier evidences that downward revisions are closely correlated with past price whereas upward revisions are incrementally informative beyond momentum. Together these double-sort results paint a fairly consistent picture for our analyst asymmetry conjecture and lend strong support to our hypothesis that the observed differential informativeness in good news and bad news revisions is driven by analyst agency problem.

4.4 Fama-Macbeth Regression with Three-Way Interactive Terms

To supplement our double-sort test, we add a few interactive terms in our Fama-Macbeth cross-section regression. Starting from the benchmark model specification (1) in Table 5, we add additional three-way interactive terms defined as BAD_REV_{t-1} times some firm characteristic variables such as *SIZE*, *NUMEST* and *INST*, which proxy for the severity of conflicts of interest. When we add a particular three-way interactive term, we also control for the relevant characteristic variable. We consider three dependent variables, RET_t, $RET3_{t,t+2}$ and $RET6_{t,t+5}$.

INSERT TABLE [6]

The regression results are summarized in Table 6. Consistent with earlier regression results in Table 5, the coefficients of REV_{t-1} are still significantly positive and those of BAD_{t-1} remain significantly negative. However, the three-way interaction terms almost completely take away the return predictive power of *REV_BAD*. Particularly, when *REV_BAD_INST* and REV*_BAD_SIZE* are included in the regression, their coefficients are significantly negative while those of *REV_BAD* are no longer significantly different from zero. It seems that analysts' reluctance and sluggishness to disclose bad news is closely dependent on the size of the firm and how important is the stock to the bank's institutional holding. Therefore, "Less is more, more is not better" effect is more pronounced among those stocks that are particularly prone to the analyst agency problem.

4.5 Robustness Tests with Alternative Definitions, in Sub-Periods and by Exchange

In this subsection, we perform robustness tests to make sure that our results are not driven by data mining. First, we examine if the asymmetry still exists when alternative definitions of REV are used. Deflating the forecast revisions with last month's price tend to penalize stocks with low price and/or stocks just experienced large price decline. We therefore repeat all the analysis in this paper with alternative definitions of REV_t scaled by stock price at the last year-end, and by asset. In Panel A of Table 7, we repeat the same single sort test with REV scaled by the last year-end's stock price. In Panel B, we use an alternative definition of REV deflated by asset. The results remain qualitatively the same under both alternative REV definitions, suggesting that our results are not driven by the choices of denominators.

INSERT TABLE [7]

Evaluating informativeness based on abnormal return post revision is always open to the criticism that the expected return benchmark used in measuring abnormal returns may be mis-specified (Fama, 1998). Using a characteristic-based benchmark to estimate the abnormal return we repeat the single sort test. Specifically, the characteristic-based benchmarks are constructed from the returns of 25 passive portfolios that are matched with stocks held in REV portfolio on the basis of the market capitalization, book-to-market, and prior-year return characteristics of those stocks (Daniel, Grinblatt, Titman, & Wermers, 1997). Similar results are found and we tabulated them in Panel C suggesting that our result is not sensitive to the benchmark model we use to adjust returns.

INSERT TABLE [8]

We also repeat the single sort test in 2 sub-periods (Table 8, Panel A). Asymmetry is significant in both sub-periods, especially in the second half of our sample period. In Table 8 Panel B, we show the single sort test results by exchange and find that REV effect is present in both AMEX/NYSE and NASDAQ stocks, perhaps more pronounced in NASDAQ stocks.

5. Conclusion

Our paper documents that the information quality in analysts' bad news revisions is inferior. We demonstrate that, after controlling for momentum, extreme downward revisions contain little incremental information compared with moderate downward revisions – "Less is more and more is not better" when it comes to bad news. We provide evidence that such asymmetry is driven by analyst agency problem as the differential abnormal return predictive power is more pronounced among bigger, heavily covered stocks with higher institutional holding – stocks typically are more prone to the analyst agency problem.

Our paper could be interesting to researchers, practitioners and regulators. It is a common empirical technique to use consensus forecast data to proxy for market expectations. Our study however reiterates again that analyst forecasts may not be a clean measure of expected earnings. The estimates issued by analysts may be colored by other incentives such as the desire to encourage investors to trade and hence generate brokerage commissions, and to maintain friendly relationship with company for access to information and/or future investment banking revenues. Analyst-revision-based stock ranking has been a popular technique used by investment managers. Traders and investors might be able to improve their existing revision-based strategy by being more selective on informative revisions.

The conflict of interest issue has become the focus of intense debate in the financial press and several lawsuits in recent years. From the perspective of capital market efficiency, the misalignment of economic incentives that is at the root of analyst asymmetric behavior is an important source of loss of information. Ideally, analysts ought to disclose their views fully and timely regardless the nature of their views. Our paper highlights the import of recent regulatory reforms on analyst behavior and suggests policies put particular emphasis on how analysts disseminate negative news.

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Table 1: Revisions Summary Statistics

This table reports the descriptive statistics for analyst consensus revisions for NYSE, AMEX and Nasdaq common stocks during the period January 1983 to March 2008. Panel A reports the number of firms in each size decile, their mean and median size, the distribution of revisions including mean, standard deviation and various percentiles, as well as the percentage of upward, downward and zero revisions. Size deciles are defined based on AMEX/NYSE size breakpoint in any given month. Panel B reports the same statistics by number of months to fiscal year-end and Panel C reports by momentum deciles. We exclude the extreme top and bottom 1% of the REV variable.

Panel A: By AMEX/NYSE Size Deciles

SIZE	Firm No	Mean Size	Median Size	Mean	Stdev	Max	Q3	Median	Q1	Min	REV<0 %	REV=0 %	REV>0 %
1	1431	15	13	-0.0010	0.0139	0.0575	0.0000	0.0000	0.0000	-0.0690	0.18	0.65	0.17
2	3546	44	38	-0.0013	0.0131	0.0580	0.0000	0.0000	-0.0011	-0.0693	0.28	0.49	0.23
3	4604	108	88	-0.0011	0.0120	0.0579	0.0007	0.0000	-0.0017	-0.0693	0.34	0.36	0.29
4	4464	218	171	-0.0009	0.0114	0.0580	0.0009	0.0000	-0.0018	-0.0693	0.38	0.28	0.34
5	3731	363	299	-0.0007	0.0109	0.0580	0.0011	0.0000	-0.0018	-0.0692	0.41	0.22	0.37
6	2997	579	489	-0.0005	0.0102	0.0580	0.0011	0.0000	-0.0017	-0.0694	0.44	0.16	0.40
7	2268	967	849	-0.0004	0.0097	0.0580	0.0012	0.0000	-0.0016	-0.0692	0.45	0.12	0.43
8	1641	1738	1504	-0.0002	0.0095	0.0580	0.0012	0.0000	-0.0014	-0.0692	0.47	0.08	0.44
9	1115	3865	3144	-0.0000	0.0090	0.0579	0.0011	0.0000	-0.0013	-0.0691	0.49	0.05	0.46
10	594	23283	11054	0.0001	0.0088	0.0578	0.0010	0.0000	-0.0009	-0.0691	0.48	0.03	0.49

Panel B: By Months Fiscal Year-end

FYEM	Firm No	Mean Size	Median Size	Mean	Stdev	Max	Q3	Median	Q1	Min	REV<0 %	REV=0 %	REV>0 %
0	9010	2776	369	-0.0010	0.0083	0.0579	0.0003	0.0000	-0.0011	-0.0693	0.45	0.22	0.33
1	9069	2672	373	-0.0010	0.0092	0.0580	0.0005	0.0000	-0.0010	-0.0691	0.41	0.23	0.36
2	8661	2890	415	-0.0012	0.0113	0.0580	0.0013	0.0000	-0.0027	-0.0691	0.49	0.10	0.41
3	8751	2917	406	-0.0014	0.0087	0.0579	0.0003	0.0000	-0.0016	-0.0692	0.47	0.22	0.31
4	8785	2826	409	-0.0011	0.0095	0.0578	0.0005	0.0000	-0.0013	-0.0693	0.42	0.23	0.35
5	8451	3056	459	-0.0016	0.0112	0.0580	0.0014	0.0000	-0.0029	-0.0693	0.47	0.11	0.42
6	8506	3066	445	-0.0014	0.0091	0.0574	0.0005	0.0000	-0.0016	-0.0690	0.44	0.22	0.33
7	8536	2957	444	-0.0007	0.0097	0.0580	0.0008	0.0000	-0.0012	-0.0692	0.39	0.23	0.38
8	8280	3133	481	-0.0006	0.0112	0.0580	0.0017	0.0000	-0.0022	-0.0693	0.43	0.14	0.43
9	8449	3264	501	0.0008	0.0115	0.0580	0.0016	0.0000	-0.0011	-0.0692	0.38	0.21	0.41
10	8060	3465	530	0.0050	0.0155	0.0580	0.0114	0.0035	0.0000	-0.0694	0.25	0.13	0.63
11	8604	3328	456	-0.0007	0.0094	0.0580	0.0006	0.0000	-0.0012	-0.0692	0.44	0.19	0.37

Panel C: By Momentum

MOM	Firm No	Mean Size	Median Size	Mean	Stdev	Max	Q3	Median	Q1	Min	REV<0 %	REV=0 %	REV>0 %
1	7476	1270	225	-0.0043	0.0150	0.0580	0.0000	-0.0002	-0.0068	-0.0693	0.52	0.23	0.25
2	7952	2365	350	-0.0021	0.0116	0.0580	0.0004	-0.0000	-0.0035	-0.0693	0.51	0.19	0.31
3	7888	3121	462	-0.0011	0.0102	0.0579	0.0006	0.0000	-0.0022	-0.0692	0.48	0.19	0.34
4	7569	3733	564	-0.0006	0.0096	0.0580	0.0007	0.0000	-0.0017	-0.0692	0.46	0.18	0.36
5	7414	4045	630	-0.0003	0.0091	0.0580	0.0008	0.0000	-0.0013	-0.0691	0.44	0.17	0.39
6	7310	4060	663	0.0002	0.0090	0.0580	0.0010	0.0000	-0.0010	-0.0693	0.41	0.17	0.41
7	7284	4002	653	0.0003	0.0091	0.0579	0.0011	0.0000	-0.0008	-0.0693	0.39	0.17	0.43
8	7317	3695	585	0.0006	0.0095	0.0579	0.0014	0.0000	-0.0007	-0.0694	0.37	0.17	0.45
9	7385	2973	461	0.0007	0.0094	0.0580	0.0016	0.0000	-0.0006	-0.0692	0.35	0.18	0.47
10	7054	1446	249	0.0013	0.0102	0.0580	0.0023	0.0000	-0.0004	-0.0689	0.31	0.21	0.49

Table 2: Revisions and Firm Characteristics, Momentum

This table summarizes the univariate statistics for the firm characteristic variables of our nine groups of firms sorted by revision (REV). REV is measured by the month-on-month change in analysts' consensus earnings forecasts. The variables used are defined as follows. NUMEST is the number of analysts that provide earning forecasts. BM is the book-to-market ratio at year-end. PROFIT is the Operating Margin defined as EBIDA/sales and ROE is Operating Income after Depreciation divided by Book Equity. ACCRU is the accrual component of earning as per Sloan (1996). SIZE is the logarithm of a firm's year-end market value. TO is a firm's turnover defined as the prior six months' trading volume divided by shares outstanding. INST is institutional holding and idiosyncratic risk (IVOL) is computed based on Fama-French 3 factor model with daily returns in the previous month. DISP is analyst forecast dispersion defined as the standard deviation of individual analyst forecasts used to estimate consensus forecast scaled by stock price. INVP is the inverse of price. CADJFAC is the cumulative adjustment factor for stock split. Our sample period is January 1983 to March 2008.

Panel A: Revisions and Firm Characteristics

Rank	REV	MOM	SIZE	BM	AGE	TO	MED ERROR	ROE	ACCRU	INVP	DISP	IVOL	NUMEST	CADJFAC	INST
1	-0.0208	-0.0312	1996	0.79	15	0.1480	1.0093	0.40	-0.0334	0.1119	0.0161	0.0200	4	1.84	0.46
2	-0.0047	0.0210	2578	0.72	17	0.1350	0.6858	0.28	-0.0307	0.0733	0.0090	0.0172	5	2.02	0.50
3	-0.0015	0.0563	3568	0.66	19	0.1283	0.3954	0.22	-0.0293	0.0549	0.0054	0.0155	5	2.18	0.53
4	-0.0004	0.0977	6145	0.55	20	0.1306	0.2380	0.26	-0.0272	0.0405	0.0036	0.0147	6	2.45	0.56
5	0.0000	0.0789	913	0.73	13	0.1122	0.5813	0.23	-0.0317	0.1222	0.0078	0.0200	2	1.71	0.41
6	0.0003	0.1352	6738	0.53	20	0.1387	0.1872	0.26	-0.0290	0.0390	0.0038	0.0145	6	2.48	0.57
7	0.0016	0.1408	4171	0.63	19	0.1344	0.2950	0.21	-0.0330	0.0486	0.0053	0.0150	5	2.30	0.54
8	0.0046	0.1446	3361	0.69	18	0.1369	0.3895	0.32	-0.0366	0.0596	0.0096	0.0160	5	2.27	0.51
9	0.0177	0.1416	2701	0.72	16	0.1446	0.6747	0.22	-0.0427	0.0832	0.0208	0.0177	4	2.36	0.47

Panel B: Revisions and Momentum

Y = REV	**Good/Bad news based on MOM**			
Var	**Good**	**Bad**	**All**	**All**
Intercept	0.000*	-0.000	-0.001***	-0.000*
	(1.92)	(-1.41)	(-6.51)	(-1.85)
MOM	0.002***	0.011***	0.005***	0.002***
	(12.03)	(24.33)	(20.58)	(14.42)
MOM_BAD				0.008***
				(20.28)
SAMPLE	268334	267010	535344	535344
ADJRSQ	0.0030	0.0211	0.0197	0.0262

Y = MOM	**Good/Bad news based on REV**			
Var	**Good**	**Bad**	**All**	**All**
Intercept	0.143***	0.072***	0.072***	0.105***
	(13.52)	(7.07)	(7.07)	(10.15)
REV	-0.425	4.008***	4.008***	1.592***
	(-1.52)	(18.95)	(18.95)	(6)
REV_BAD				3.833***
				(8.84)
SAMPLE	208557	227260	227260	435817
ADJRSQ	0.0062	0.0311	0.0311	0.0343

Table 3: Single Sort on Revisions

This table presents average monthly raw returns and excess returns for stocks in ten deciles sorted by REV. Each month, we divide our sample of firms t into four REV^+ classes from low to high, with P1 representing the most negative REV quartile and with P4 representing the least and four REV^+ classes, with P6 representing the least positive REV quartile and with P9 representing the most. REV is measured by the month-on-month change in analysts' consensus earnings forecasts. In Panel A, we report the equal-weighted average monthly returns of the eight REV portfolios in the one month post revision. We also report the returns of two zero-cost trading strategies (P4-P1) that goes long P4 and short P1, and (P9-P6) that goes long P9 and short P6. Return differences in these two long/short strategies (difference in difference, or DID) are also reported in the last column. Excessive returns are computed based on CAPM, Fama-French 3-Factor Model and Carhart 4-Factor Model. T-statistics based on Newy-West standard errors with 1 lag are reported below the returns in brackets. In Panel B and Panel C, we report the same statistics with three-month and six-month holding periods. T-statistics based on Newy-West standard errors are reported below the returns in brackets. The number of lags used in Newy-West adjustment equals to the number of months the portfolio are held for. Our sample period is January 1983 to March 2008.

Panel A: Holding for 1 Month

	REV< 0					REV > 0					P9-P1	DID
	P1	**P2**	**P3**	**P4**	**P4-P1**	**P6**	**P7**	**P8**	**P9**	**P9-P6**		
RAW	0.0105***	0.0084**	0.0079**	0.0075**	-0.0029	0.0092***	0.0124***	0.0154***	0.0212***	0.0120***	0.0107***	0.0149***
	(2.63)	(2.45)	(2.5)	(2.52)	(-1.58)	(3.13)	(4.11)	(4.82)	(5.85)	(7.86)	(8.08)	(4.81)
CAPM	-0.0014	-0.0027*	-0.0028**	-0.0031***	-0.0017	-0.0014	0.0017*	0.0045***	0.0097***	0.0111***	0.0111***	0.0128***
	(-0.67)	(-1.67)	(-2.07)	(-2.9)	(-1.03)	(-1.36)	(1.72)	(3.51)	(5.93)	(7.71)	(8.7)	(4.58)
FF3F	-0.0024	-0.0040***	-0.0040***	-0.0037***	-0.0012	-0.0016	0.0013	0.0035***	0.0084***	0.0100***	0.0108***	0.0112***
	(-1.46)	(-3.41)	(-3.77)	(-4.34)	(-0.72)	(-1.64)	(1.59)	(3.78)	(7.6)	(7.65)	(7.94)	(4.17)
CAR4	0.0016	-0.0012	-0.0020**	-0.0030***	-0.0046***	-0.0017	0.0016**	0.0046***	0.0099***	0.0116***	0.0083***	0.0162***
	(1.19)	(-1.34)	(-2.26)	(-3.34)	(-2.66)	(-1.61)	(1.98)	(5.14)	(9.07)	(7.66)	(6.34)	(5.48)

Panel B: Holding for 3 months

	REV<0					REV > 0					P9-P1	DID
	P1	**P2**	**P3**	**P4**	**P4-P1**	**P6**	**P7**	**P8**	**P9**	**P9-P6**		
RAW	0.0102***	0.0088***	0.0086***	0.0082***	-0.0020	0.0093***	0.0113***	0.0145***	0.0197***	0.0104***	0.0095***	0.0124***
	(2.68)	(2.67)	(2.91)	(2.88)	(-1.16)	(3.29)	(3.9)	(4.74)	(5.63)	(7.46)	(8.41)	(4.19)
CAPM	-0.0016	-0.0023	-0.0021	-0.0025**	-0.0009	-0.0014	0.0006	0.0035***	0.0082***	0.0095***	0.0097***	0.0104***
	(-0.74)	(-1.32)	(-1.49)	(-2.35)	(-0.58)	(-1.38)	(0.54)	(2.73)	(4.94)	(7.1)	(9.06)	(3.81)
FF3F	-0.0027*	-0.0038***	-0.0033***	-0.0030***	-0.0003	-0.0015	0.0000	0.0025***	0.0070***	0.0085***	0.0097***	0.0088***
	(-1.77)	(-3.4)	(-3.4)	(-3.49)	(-0.23)	(-1.63)	(0.05)	(3.17)	(7.09)	(6.78)	(8.15)	(3.6)
CAR4	0.0014	-0.0012	-0.0013*	-0.0021**	-0.0034**	-0.0011	0.0007	0.0036***	0.0083***	0.0094***	0.0070***	0.0128***
	(1.14)	(-1.38)	(-1.74)	(-2.52)	(-2.34)	(-1.21)	(0.92)	(4.67)	(7.95)	(6.96)	(7)	(4.9)

Panel C: Holding for 6 months

	REV< 0					REV > 0					P9-P1	DID
	P1	**P2**	**P3**	**P4**	**P4-P1**	**P6**	**P7**	**P8**	**P9**	**P9-P6**		
RAW	0.0114***	0.0099***	0.0093***	0.0086***	-0.0028*	0.0094***	0.0111***	0.0136***	0.0174***	0.0080***	0.0060***	0.0108***
	(3.39)	(3.45)	(3.57)	(3.48)	(-1.66)	(3.72)	(4.33)	(4.96)	(5.48)	(6.22)	(6.79)	(3.74)
CAPM	-0.0003	-0.0013	-0.0014	-0.0020*	-0.0017	-0.0013	0.0004	0.0026**	0.0059***	0.0072***	0.0062***	0.0089***
	(-0.12)	(-0.68)	(-0.93)	(-1.71)	(-1.11)	(-1.24)	(0.37)	(2.01)	(3.51)	(5.76)	(7.47)	(3.29)
FF3F	-0.0016	-0.0027**	-0.0027***	-0.0026***	-0.0010	-0.0015*	-0.0003	0.0015*	0.0047***	0.0063***	0.0063***	0.0073***
	(-1.19)	(-2.46)	(-2.74)	(-2.77)	(-0.74)	(-1.66)	(-0.34)	(1.94)	(5.32)	(5.58)	(7.33)	(3.08)
CAR4	0.0022*	-0.0001	-0.0006	-0.0014	-0.0036**	-0.0007	0.0006	0.0026***	0.0060***	0.0067***	0.0038***	0.0103***
	(1.89)	(-0.11)	(-0.76)	(-1.61)	(-2.57)	(-0.84)	(0.77)	(3.77)	(6.17)	(5.74)	(5.51)	(4.16)

Table 4: Fama-Macbeth Cross-Sectional Regressions

Fama-Macbeth cross-sectional regressions results are computed for stock returns on the following variables: revision at t-1 (REV_{t-1}), defined as the month-on-month change in analysts' consensus earnings forecasts; the natural logarithm of market equity measured at year-end (SIZE); book-to-market ratio measured at year-end (BM); cumulative returns in the past six months (MOM); equity issuance (ISSUE) as per Pontiff and Woodgate (2008); turnover (TO); turnover times Nasdaq dummy (NASD_TO); accrual (ACCRU) as per Sloan (1996); institutional holding (INST); and idiosyncratic risk (IVOL) is computed based on Fama-French 3 factor model with daily returns in the previous month. The dependent variable is three-month cumulative return (RET3) from t to t+2. The ADJSQR is the average of the adjusted R^2 obtained from the cross-sectional regressions. The results presented in the table are the regression coefficients and the t-statistics based on Newy-West standard errors in brackets. Theses regressions are for the 299 months from March 1983 to March 2008.

VAR	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Intercept	0.028*	0.034**	0.030**	0.044***	0.031*	0.034***	0.033**	0.031**	0.042***	0.029*	0.057***
	(1.84)	(2.25)	(2.03)	(3.11)	(1.97)	(2.7)	(2.36)	(2.1)	(3.93)	(1.85)	(4.51)
SIZE	-0.000	-0.001	-0.000	0.001	-0.000	0.000	-0.001	-0.000	-0.001	-0.000	-0.000
	(-0.38)	(-0.42)	(-0.16)	(0.47)	(-0.21)	(0.05)	(-0.69)	(-0.15)	(-0.62)	(-0.23)	(-0.31)
BM	0.006**	0.006**	0.006*	0.006*	0.005*	0.005**	0.005*	0.005*	0.004*	0.005*	0.003
	(1.98)	(1.98)	(1.83)	(1.7)	(1.76)	(2.01)	(1.84)	(1.77)	(1.69)	(1.72)	(1.09)
MOM	0.028***	0.025***	0.025***	0.024***	0.025***	0.025***	0.025***	0.025***	0.009	0.021***	0.010
	(4.09)	(3.57)	(3.64)	(3.44)	(3.69)	(4.01)	(3.73)	(3.6)	(1.21)	(3.16)	(1.4)
REV	0.236***	0.152***	0.478***	0.556***	0.475***	0.468***	0.478***	0.478***	0.576***	0.490***	0.529***
	(5.31)	(3.47)	(5.67)	(5.8)	(5.72)	(5.58)	(5.54)	(5.71)	(7.28)	(5.54)	(5.2)
BAD		-0.010***	-0.010***	-0.009***	-0.010***	-0.010***	-0.010***	-0.010***	-0.007***	-0.010***	-0.006***
		(-7.35)	(-7.07)	(-6.78)	(-7.13)	(-7.92)	(-7.47)	(-7.2)	(-5.92)	(-6.54)	(-4.48)
REV_BAD			-0.557***	-0.696***	-0.552***	-0.569***	-0.555***	-0.558***	-0.569***	-0.631***	-0.573***
			(-4.4)	(-4.51)	(-4.46)	(-4.54)	(-4.3)	(-4.45)	(-5.07)	(-4.79)	(-3.58)
INST				-0.033***							-0.036***
				(-6.56)							(-7.81)
NUMEST					0.000						-0.000
					(0.79)						(-0.02)
TO						-0.072***					0.025
						(-3.27)					(1.13)
NASD_TO						0.029					-0.085
						(1.61)					(-1.5)
AGE							0.000				0.000
							(1.34)				(1.02)
ISSUE								-0.010***			-0.017***
								(-4.31)			(-3.75)
IVOL									-0.575***		-0.432***
									(-3.06)		(-2.87)
ACCRU										-0.070***	-0.060***
										(-5.9)	(-3.86)
SAMPLE	350618	350618	350618	255703	350618	350618	350618	350618	211202	278177	128368
ADJRSQ	0.0488	0.0505	0.0535	0.0580	0.0564	0.0768	0.0583	0.0552	0.0697	0.0583	0.0980

Table 5: Double Sorts on Revisions

This table presents the raw returns and excess returns of the REV portfolios for subsamples of firms sorted on seven firm characteristic variables: SIZE, INST, NUMEST, INVP, AGE and DISP. SIZE is the logarithm of a firm's year-end market value; NUMEST is the number of analysts that provide earning forecasts; INST is institutional holding; INVP is the inverse of price; AGE is number of years exist in CRSP; IVOL is idiosyncratic risk; and DISP is analyst dispersion defined as the standard deviation of analyst earnings forecasts. Each month, we divide our sample of firms into four classes based on the above six variables. We report The equal-weighted risk adjusted returns of each of these 16 (4 x 4) portfolios in the first month after portfolio formation and a trading strategy that buy H^+ (H^-) and sell L^+ (L^-) as well as the difference in differences within each characteristic quartile. We then sort each quartile of stocks into two upward revisions portfolios based on REV_{t-1} from low to high (L^+ and H^+) and also two downward portfolios (L^- and H^-). We report their excess returns based on Fama-French 3-Factor and Carhart 4-Factor model, along with the Newy-West adjusted t-statistics in brackets. Our sample period is January 1976 to March 2008. Panel B reports the two-way classification on Revisions and momentum.

Panel A: Two-Way Classification on Revisions and Stock Characteristics

	REV< 0						**REV > 0**					
	FF3F			**CAR4**			**FF3F**			**CAR4**		
	L^-	**H^-**	**$H^- - L^-$**	**L^-**	**H^-**	**$H^- - L^-$**	**L^+**	**H^+**	**$H^+ - L^+$**	**L^+**	**H^+**	**$H^+ - L^-$**
	SIZE											
1	-0.0114***	-0.0038**	0.0076***	-0.0086***	-0.0030	0.0056**	0.0079***	0.0158***	0.0079***	0.0084***	0.0170***	0.0086***
Small	(-4.81)	(-2)	(3.39)	(-3.72)	(-1.51)	(2.54)	(3.71)	(6.69)	(3.13)	(3.78)	(7.22)	(3.5)
2	-0.0050***	-0.0064***	-0.0014	-0.0017	-0.0052***	-0.0035*	0.0007	0.0074***	0.0067***	0.0009	0.0092***	0.0083***
	(-3.14)	(-5.13)	(-0.85)	(-1.2)	(-4.03)	(-1.9)	(0.48)	(4.73)	(3.81)	(0.6)	(6.09)	(4.32)
3	-0.0028	-0.0033***	-0.0005	0.0008	-0.0019	-0.0028	-0.0016	0.0045***	0.0060***	-0.0015	0.0061***	0.0076***
	(-1.62)	(-2.76)	(-0.32)	(0.6)	(-1.64)	(-1.63)	(-1.45)	(3.63)	(4.42)	(-1.26)	(4.94)	(4.85)
4	-0.0011	-0.0026***	-0.0014	0.0023**	-0.0014*	-0.0037***	-0.0008	0.0031***	0.0039***	-0.0007	0.0037***	0.0044***
Large	(-0.77)	(-3.01)	(-1.13)	(1.97)	(-1.81)	(-2.88)	(-0.94)	(3.93)	(3.75)	(-0.9)	(4.73)	(4.2)
	INST											
1	-0.0011	0.0004	0.0014	0.0026	0.0011	-0.0015	0.0057***	0.0124***	0.0067***	0.0059***	0.0137***	0.0078***
Low	(-0.53)	(0.3)	(0.7)	(1.01)	(0.9)	(-0.57)	(4.57)	(8.36)	(3.73)	(4.63)	(8.29)	(4.01)
2	-0.0032**	-0.0010	0.0022	-0.0002	0.0005	0.0007	0.0023**	0.0089***	0.0065***	0.0020*	0.0098***	0.0078***
	(-2.15)	(-0.91)	(1.4)	(-0.17)	(0.43)	(0.46)	(2.34)	(7.02)	(4.33)	(1.84)	(7.24)	(4.67)
3	-0.0034**	-0.0036***	-0.0002	-0.0001	-0.0023**	-0.0022*	0.0002	0.0045***	0.0043***	0.0006	0.0050***	0.0044***
	(-2.16)	(-3.18)	(-0.17)	(-0.11)	(-2.15)	(-1.67)	(0.18)	(3.67)	(3.3)	(0.48)	(3.79)	(3.44)
4	-0.0046**	-0.0081***	-0.0034**	-0.0013	-0.0064***	-0.0051***	-0.0050***	-0.0014	0.0036***	-0.0048***	-0.0004	0.0043***
High	(-2.55)	(-5.83)	(-2.42)	(-0.84)	(-5.16)	(-3.62)	(-3.56)	(-1.08)	(3.01)	(-3.59)	(-0.38)	(3.55)
	NUMEST											
1	-0.0078***	-0.0025**	0.0052***	-0.0052***	-0.0018	0.0034*	-0.0007	0.0076***	0.0083***	-0.0005	0.0095***	0.0100***
Light	(-4.74)	(-2.08)	(2.99)	(-3.07)	(-1.46)	(1.77)	(-0.48)	(5.14)	(4.32)	(-0.37)	(5.51)	(4.15)
2	-0.0038***	-0.0040***	-0.0002	-0.0010	-0.0032**	-0.0022	0.0010	0.0060***	0.0050***	0.0009	0.0083***	0.0074***
	(-2.73)	(-3.45)	(-0.13)	(-0.83)	(-2.51)	(-1.24)	(0.83)	(3.95)	(3.08)	(0.74)	(5.32)	(3.64)
3	-0.0029**	-0.0035***	-0.0006	0.0004	-0.0022*	-0.0026*	-0.0005	0.0067***	0.0072***	-0.0007	0.0078***	0.0085***
	(-1.99)	(-3.16)	(-0.46)	(0.38)	(-1.95)	(-1.84)	(-0.42)	(6.19)	(5.53)	(-0.56)	(6.99)	(5.99)
4	-0.0022	-0.0041***	-0.0019	0.0020	-0.0024**	-0.0044***	-0.0009	0.0039***	0.0048***	-0.0003	0.0041***	0.0044***
Heavy	(-1.2)	(-3.76)	(-1.39)	(1.47)	(-2.48)	(-3.51)	(-0.92)	(3.55)	(3.92)	(-0.32)	(3.11)	(2.89)

Table 5 (continued)

	TO											
1	-0.0037***	-0.0020*	0.0017	-0.0014	-0.0014	0.0000	0.0005	0.0062***	0.0058***	0.0005	0.0073***	0.0067***
Low	(-2.91)	(-1.68)	(1.46)	(-1.28)	(-1.1)	(0)	(0.39)	(4.83)	(4.77)	(0.42)	(5.81)	(5.08)
2	-0.0046***	-0.0023**	0.0023*	-0.0019**	-0.0013	0.0006	0.0002	0.0059***	0.0057***	0.0002	0.0073***	0.0071***
	(-3.64)	(-2.16)	(1.94)	(-2.04)	(-1.26)	(0.54)	(0.15)	(4.91)	(4.31)	(0.17)	(6.1)	(5.05)
3	-0.0034**	-0.0040***	-0.0006	0.0004	-0.0027**	-0.0031**	-0.0014	0.0037***	0.0050***	-0.0010	0.0051***	0.0061***
	(-2.12)	(-3.39)	(-0.41)	(0.36)	(-2.48)	(-2.09)	(-1.2)	(2.99)	(3.98)	(-0.82)	(4.59)	(4.68)
4	-0.0016	-0.0061***	-0.0045**	0.0027	-0.0040**	-0.0067***	-0.0001	0.0070***	0.0071***	0.0002	0.0082***	0.0080***
High	(-0.71)	(-3.74)	(-2.53)	(1.24)	(-2.48)	(-3.35)	(-0.09)	(3.94)	(3.83)	(0.12)	(4.31)	(3.6)
	AGE											
1	-0.0050**	-0.0066***	-0.0016	0.0000	-0.0047***	-0.0047*	-0.0023	0.0078***	0.0102***	-0.0018	0.0107***	0.0125***
Young	(-2.16)	(-4.79)	(-0.74)	(0)	(-3.32)	(-1.68)	(-1.5)	(4.38)	(4.89)	(-1.21)	(5.2)	(4.8)
2	-0.0042***	-0.0039***	0.0003	-0.0011	-0.0024**	-0.0013	0.0001	0.0075***	0.0074***	0.0004	0.0088***	0.0084***
	(-2.9)	(-3.26)	(0.25)	(-0.94)	(-2.22)	(-1.07)	(0.09)	(5.83)	(4.95)	(0.29)	(7)	(5.19)
3	-0.0022	-0.0033***	-0.0011	0.0011	-0.0020**	-0.0030**	0.0014	0.0054***	0.0041***	0.0014	0.0061***	0.0047***
	(-1.53)	(-3.25)	(-0.92)	(0.9)	(-2.1)	(-2.39)	(1.51)	(5.56)	(3.69)	(1.49)	(6.03)	(4.1)
4	-0.0023*	-0.0024**	-0.0001	0.0001	-0.0016	-0.0017*	-0.0001	0.0023**	0.0024**	-0.0002	0.0022**	0.0024**
Old	(-1.84)	(-2.43)	(-0.07)	(0.06)	(-1.64)	(-1.69)	(-0.08)	(2.48)	(2.35)	(-0.21)	(2.24)	(2.36)
	INVP											
1	0.0010	-0.0034***	-0.0044***	0.0002	-0.0045***	-0.0047***	-0.0008	0.0060***	0.0068***	-0.0021**	0.0037***	0.0058***
High	(1)	(-3.42)	(-3.97)	(0.22)	(-4.66)	(-4.24)	(-0.87)	(5.33)	(5.31)	(-2.14)	(3.67)	(5.12)
2	-0.0018*	-0.0039***	-0.0021*	-0.0007	-0.0029**	-0.0021*	-0.0007	0.0036***	0.0044***	-0.0008	0.0034***	0.0043***
	(-1.88)	(-3.49)	(-1.77)	(-0.8)	(-2.58)	(-1.9)	(-0.6)	(3.55)	(3.9)	(-0.67)	(3.27)	(3.81)
3	-0.0061***	-0.0041**	0.0019	-0.0027**	-0.0007	0.0020	0.0011	0.0071***	0.0061***	0.0031**	0.0089***	0.0058***
	(-3.87)	(-2.51)	(1.56)	(-2.4)	(-0.51)	(1.41)	(0.67)	(4.94)	(4.58)	(2.05)	(6.55)	(4.07)
4	-0.0057**	-0.0048**	0.0009	0.0009	0.0009	0.0000	0.0004	0.0064**	0.0060***	0.0059**	0.0118***	0.0059***
Low	(-2.11)	(-1.97)	(0.57)	(0.4)	(0.47)	(0)	(0.17)	(2.47)	(3.17)	(2.52)	(4.49)	(2.69)

Panel B: Two-Way Classification on Revisions and Momentum

	REV<0						**REV>0**					
	CAPM			**FF3F**			**CAMP**			**FF3F**		
	L-	**H-**	**H-- L-**	**L-**	**H-**	**H-- L-**	**L+**	**H+**	**H+- L+**	**L+**	**H+**	**H+- L-**
1	-0.0039	-0.0075***	-0.0035**	-0.0046	-0.0075***	-0.0029*	-0.0052**	-0.0002	0.0050***	-0.0040	0.0000	0.0040**
Loser	(-1.34)	(-3.28)	(-2.14)	(-1.49)	(-3.15)	(-1.79)	(-2.18)	(-0.06)	(2.91)	(-1.61)	(0)	(2.43)
2	-0.0011	-0.0004	0.0007	-0.0037**	-0.0022*	0.0014	0.0016	0.0053***	0.0037***	0.0005	0.0032**	0.0027**
	(-0.63)	(-0.28)	(0.67)	(-2.49)	(-1.76)	(1.5)	(1.27)	(3.59)	(2.93)	(0.36)	(2.34)	(2.2)
3	-0.0015	-0.0020	-0.0005	-0.0041***	-0.0039***	0.0002	0.0008	0.0070***	0.0062***	-0.0006	0.0045***	0.0050***
	(-0.97)	(-1.44)	(-0.46)	(-4.21)	(-3.59)	(0.16)	(0.67)	(5.19)	(5.55)	(-0.51)	(4.47)	(4.45)
4	0.0014	-0.0024	-0.0038***	0.0016	-0.0018	-0.0034**	0.0016	0.0117***	0.0101***	0.0021*	0.0115***	0.0093***
Winner	(0.62)	(-1.22)	(-2.78)	(0.97)	(-1.08)	(-2.3)	(0.98)	(5.68)	(7.33)	(1.73)	(7.42)	(6.72)
W-L	0.0053	0.0051	-0.0003	0.0062	0.0057	-0.0004	0.0068**	0.0119***	0.0051**	0.0062*	0.0115***	0.0053**
	(1.58)	(1.62)	(-0.14)	(1.53)	(1.63)	(-0.22)	(2.22)	(3.49)	(2.44)	(1.92)	(2.82)	(2.45)

Table 6: Fama-Macbeth Regressions with Interactive Terms

We regress one-month return (RET_t), three-month ($RET3_{t,\ t+2}$) and six-month cumulative returns ($RET6_{t,\ t+5}$), on REV_{t-1}, a dummy variable (BAD_{t-1}) that equals 1 if REV_{t-1} is negative and 0 if REV_{t-1} is positive and an interactive term between the two (BAD_REV_{t-1}) controlling for size, book to market ratio and momentum. Starting from the benchmark model specification (1) in Table 5, we add additional three-way interactive terms defined as BAD_REV_{t-1} times three firm characteristic variables *SIZE*, *NUMEST* and *INST*.

	Y = RET			Y = RET3			Y = RET6		
Var	**(1)**	**(2)**	**(3)**	**(1)**	**(2)**	**(3)**	**(1)**	**(2)**	**(3)**
Intercept	0.014**	0.017***	0.012*	0.033**	0.046***	0.032**	0.067**	0.097***	0.070**
	(2.17)	(2.85)	(1.8)	(2.24)	(3.23)	(2.02)	(2.29)	(3.23)	(2.24)
SIZE	-0.000	0.000	0.000	-0.001	0.001	-0.000	-0.002	-0.000	-0.003
	(-0.7)	(0.07)	(0.11)	(-0.55)	(0.45)	(-0.22)	(-0.66)	(-0.04)	(-0.81)
BM	0.002	0.001	0.002	0.006*	0.006*	0.005*	0.011	0.012	0.011
	(1.37)	(1.09)	(1.34)	(1.84)	(1.69)	(1.75)	(1.45)	(1.48)	(1.35)
MOM	0.001	0.000	0.001	0.025***	0.024***	0.025***	0.072***	0.069***	0.072***
	(0.3)	(0.12)	(0.27)	(3.67)	(3.45)	(3.72)	(4.71)	(4.42)	(4.83)
REV	0.144***	0.177***	0.146***	0.472***	0.554***	0.474***	0.943***	1.126***	0.931***
	(4.17)	(4.15)	(4.25)	(5.58)	(5.72)	(5.68)	(4.84)	(5.41)	(4.87)
BAD	-0.005***	-0.005***	-0.005***	-0.010***	-0.010***	-0.010***	-0.010***	-0.012***	-0.010***
	(-8.37)	(-8.54)	(-8.21)	(-7.61)	(-7.12)	(-7.45)	(-3.69)	(-4.22)	(-3.78)
REV_BAD	0.129	-0.033	-0.054	0.230	-0.252	-0.404***	-0.363	-1.482*	-1.192***
	(1.42)	(-0.38)	(-1.09)	(0.92)	(-0.9)	(-2.95)	(-0.46)	(-1.83)	(-2.78)
REV_BAD_SIZE	-0.047***			-0.145***			-0.202**		
	(-3.41)			(-4.07)			(-1.98)		
REV_BAD _INST		-0.358***			-1.126***			-1.388	
		(-2.92)			(-2.93)			(-1.64)	
INST		-0.009***			-0.037***			-0.072***	
		(-4.15)			(-7.21)			(-6.61)	
REV_BAD _ANALYST			-0.023***			-0.036***			-0.060*
			(-3.84)			(-2.93)			(-1.8)
NUMEST			-0.000			0.000			0.001
			(-1.51)			(0.28)			(1.6)
SAMPLE	419394	305190	419394	350618	255703	350618	289125	211280	289125
ADJRSQ	0.0446	0.0471	0.0476	0.0547	0.0603	0.0572	0.0618	0.0698	0.0636

Table 7: Single Sort on REV by Alternative Definition and Risk Models

Table 7 present the equal-weighted average monthly returns of the stocks in eight portfolios sorted based on alternative definitions of REV with a holding period of 1 month. We also report the returns of two zero-cost trading strategies (P4-P1) and (P9-P6) that goes long P4 (P9) and short P1 (P6). Excessive returns are computed based on CAPM, Fama-French 3-Factor Model and Carhart 4-Factor Model. T-statistics based on Newy-West standard errors with 6 lags are reported below the returns in brackets. Panel A uses REV scaled by the last year-end's stock price. In Panel B, we use an alternative definition of REV deflated by asset. Panel C uses a characteristic-based benchmark to estimate the abnormal return we repeat the single sort test and find similar results as tabulated in. Specifically, the benchmarks are constructed from the returns of 25 passive portfolios that are matched with stocks held in REV portfolio on the basis of the market capitalization, book-to-market, and prior-year return characteristics of those stocks. Our sample period is January 1983 to March 2008.

Panel A: Single Sort by REV scaled by Asset

	REV< 0					REV > 0					P9-P1	DID
	P1	P2	P3	P4	P4-P1	P6	P7	P8	P9	P9-P6		
RAW	0.0100**	0.0066*	0.0076**	0.0099***	-0.0001	0.0115***	0.0126***	0.0146***	0.0190***	0.0075***	0.0090***	0.0076
	(2.31)	(1.84)	(2.49)	(3.54)	(-0.05)	(4.27)	(4.33)	(4.38)	(4.6)	(2.87)	(6)	(1.49)
CAPM	-0.0027	-0.0048***	-0.0028*	0.0001	0.0028	0.0019	0.0023*	0.0033***	0.0065***	0.0045*	0.0092***	0.0017
	(-1.29)	(-2.81)	(-1.94)	(0.08)	(1.22)	(1.45)	(1.93)	(2.67)	(3.37)	(1.92)	(6.4)	(0.38)
FF3F	-0.0008	-0.0056***	-0.0047***	-0.0030***	-0.0022	-0.0008	0.0007	0.0028***	0.0084***	0.0092***	0.0092***	0.0114***
	(-0.53)	(-4.25)	(-4.29)	(-3.14)	(-1.42)	(-0.78)	(0.72)	(2.93)	(7.8)	(6.31)	(5.99)	(4.36)
CAR4	0.0021	-0.0027***	-0.0025***	-0.0017*	-0.0037**	-0.0003	0.0016*	0.0039***	0.0088***	0.0091***	0.0068***	0.0128***
	(1.44)	(-2.69)	(-2.74)	(-1.88)	(-2.07)	(-0.26)	(1.74)	(4.34)	(7.72)	(5.96)	(4.27)	(4.4)

Panel B: Single Sort by REV scaled by Year-end Price

	REV< 0					REV > 0					P9-P1	DID
	P1	P2	P3	P4	P4-P1	P6	P7	P8	P9	P9-P6		
RAW	0.0101***	0.0083**	0.0078**	0.0079***	-0.0022	0.0093***	0.0122***	0.0154***	0.0213***	0.0120***	0.0112***	0.0142***
	(2.63)	(2.43)	(2.44)	(2.61)	(-1.33)	(3.19)	(3.96)	(4.77)	(5.97)	(8.17)	(8.55)	(4.99)
CAPM	-0.0016	-0.0028*	-0.0029**	-0.0028**	-0.0012	-0.0012	0.0014	0.0044***	0.0099***	0.0111***	0.0115***	0.0123***
	(-0.83)	(-1.73)	(-2.02)	(-2.45)	(-0.76)	(-1.2)	(1.29)	(3.55)	(6.13)	(7.88)	(9.05)	(4.62)
FF3F	-0.0028**	-0.0042***	-0.0040***	-0.0032***	-0.0005	-0.0014	0.0011	0.0034***	0.0084***	0.0097***	0.0111***	0.0102***
	(-2.04)	(-3.68)	(-3.33)	(-3.35)	(-0.33)	(-1.36)	(1.13)	(3.9)	(8.14)	(7.68)	(8.15)	(4.34)
CAR4	-0.0002	-0.0014*	-0.0014	-0.0019**	-0.0016	-0.0007	0.0020**	0.0043***	0.0085***	0.0092***	0.0088***	0.0108***
	(-0.21)	(-1.65)	(-1.48)	(-2.11)	(-1.13)	(-0.68)	(2.25)	(5.19)	(7.79)	(7.3)	(6.51)	(6.51)

Panel C: Return Adjusted by Characteristics -DGTW

	REV< 0					REV > 0					P9-P1	DID
	P1	P2	P3	P4	P4-P1	P6	P7	P8	P9	P9-P6		
RAW	0.0105***	0.0084***	0.0079***	0.0075***	-0.0029*	0.0092***	0.0124***	0.0154***	0.0212***	0.0120***	0.0107***	0.0149***
	(2.82)	(2.6)	(2.66)	(2.65)	(-1.67)	(3.27)	(4.33)	(5.05)	(6.26)	(8.47)	(8.26)	(5.19)
SIZE	-0.0002	-0.0025***	-0.0030***	-0.0032***	-0.0030*	-0.0013*	0.0014**	0.0043***	0.0100***	0.0113***	0.0103***	0.0143***
	(-0.18)	(-2.93)	(-4.43)	(-4.98)	(-1.94)	(-1.69)	(2.31)	(6.52)	(11.82)	(9.68)	(7.76)	(6.09)
SIZE/BM	-0.0006	-0.0026***	-0.0029***	-0.0029***	-0.0022	-0.0008	0.0015**	0.0042***	0.0095***	0.0103***	0.0101***	0.0125***
	(-0.49)	(-3.15)	(-4.53)	(-4.55)	(-1.47)	(-1.14)	(2.37)	(6.51)	(11.19)	(8.95)	(7.77)	(5.37)
DGTW	-0.0000	-0.0024***	-0.0024***	-0.0029***	-0.0029**	-0.0007	0.0013**	0.0038***	0.0087***	0.0094***	0.0087***	0.0123***
	(-0.02)	(-3.51)	(-4.27)	(-5.02)	(-2.41)	(-1.21)	(2.27)	(5.6)	(11.41)	(10.09)	(7.54)	(7.05)

Table 8: Single Sort on REV by Sub-period, and Exchange

Table 8 presents the equal-weighted average monthly returns of the stocks in eight portfolios sorted based on alternative definitions of REV with a holding period of 1 month. We also report the returns of two zero-cost trading strategies (P4-P1) and (P9-P6) that goes long P4 (P9) and short P1 (P6). Excessive returns are computed based on CAPM, Fama-French 3-Factor Model and Carhart 4-Factor Model. T-statistics based on Newy-West standard errors with 6 lags are reported below the returns in brackets. Panel A reports the results of the single-sort test by sub-periods while Panel B reports the results by exchange for the entire sample period from January 1983 to March 2008. Excessive returns are computed based on CAPM, Fama-French 3-Factor Model and Carhart 4-Factor Model. T-statistics based on Newy-West standard errors with 6 lags are reported below the returns in brackets.

Panel A: By Sub-Periods

	REV<0					REV > 0					P9-P1	DID
	P1	**P2**	**P3**	**P4**	**P4-P1**	**P6**	**P7**	**P8**	**P9**	**P9-P6**		
1983 - 1995												
FF3F	-0.0044***	-0.0052***	-0.0030***	-0.0012	0.0033**	0.0016	0.0038***	0.0047***	0.0084***	0.0068***	0.0129***	0.0036*
	(-3.37)	(-5.33)	(-3.49)	(-1.53)	(2.31)	(1.5)	(4.12)	(5.16)	(8.02)	(5.9)	(8.4)	(1.79)
CAR4	-0.0022*	-0.0035***	-0.0020**	-0.0010	0.0011	0.0013	0.0039***	0.0049***	0.0085***	0.0072***	0.0107***	0.0060***
	(-1.92)	(-4.25)	(-2.43)	(-1.26)	(0.85)	(1.15)	(4.12)	(5.27)	(7.59)	(6.17)	(6.87)	(3.06)
1996 - 2008												
FF3F	0.0006	-0.0022	-0.0039**	-0.0057***	-0.0063**	-0.0043***	-0.0009	0.0030*	0.0092***	0.0135***	0.0086***	0.0198***
	(0.22)	(-1.07)	(-2.18)	(-4.08)	(-2.23)	(-3.19)	(-0.78)	(1.85)	(5.01)	(5.99)	(3.78)	(4.35)
CAR4	0.0055**	0.0013	-0.0013	-0.0046***	-0.0101***	-0.0042***	-0.0003	0.0044***	0.0114***	0.0156***	0.0059***	0.0257***
	(2.45)	(0.87)	(-0.88)	(-3.18)	(-3.49)	(-2.85)	(-0.25)	(2.82)	(6.22)	(6.2)	(2.77)	(5.22)

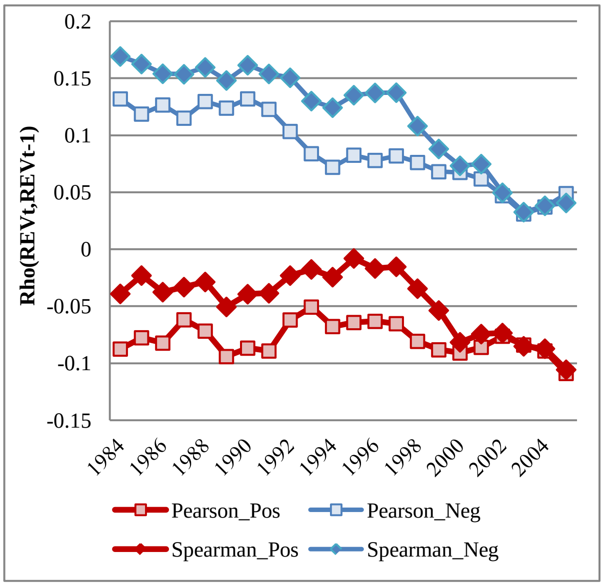
Panel B: By Exchange

	REV<0					REV > 0					P9-P1	DID
	P1	**P2**	**P3**	**P4**	**P4-P1**	**P6**	**P7**	**P8**	**P9**	**P9-P6**		
NASDAQ												
FF3F	-0.0017	-0.0044***	-0.0034**	-0.0039***	-0.0021	-0.0028*	0.0030***	0.0066***	0.0114***	0.0142***	0.0131***	0.0163***
	(-0.83)	(-2.75)	(-2.19)	(-2.89)	(-0.93)	(-1.92)	(2.61)	(4.56)	(6.79)	(6.78)	(7.29)	(4.4)
CAR4	0.0030	-0.0011	-0.0008	-0.0027*	-0.0057**	-0.0026	0.0038***	0.0086***	0.0135***	0.0161***	0.0106***	0.0218***
	(1.4)	(-0.75)	(-0.55)	(-1.89)	(-2.03)	(-1.54)	(3.27)	(5.9)	(7.05)	(5.9)	(5.83)	(4.33)
AMEX/NYSE												
FF3F	-0.0041**	-0.0042***	-0.0045***	-0.0034***	0.0007	-0.0007	-0.0003	0.0010	0.0050***	0.0058***	0.0091***	0.0050**
	(-2.31)	(-3.22)	(-3.88)	(-3.34)	(0.43)	(-0.68)	(-0.3)	(0.93)	(4.2)	(4.52)	(6)	(1.99)
CAR4	-0.0007	-0.0017	-0.0028***	-0.0029***	-0.0023	-0.0009	-0.0002	0.0011	0.0058***	0.0067***	0.0064***	0.0089***
	(-0.53)	(-1.56)	(-2.6)	(-2.81)	(-1.59)	(-0.81)	(-0.23)	(1.06)	(4.96)	(5.26)	(4.77)	(3.98)

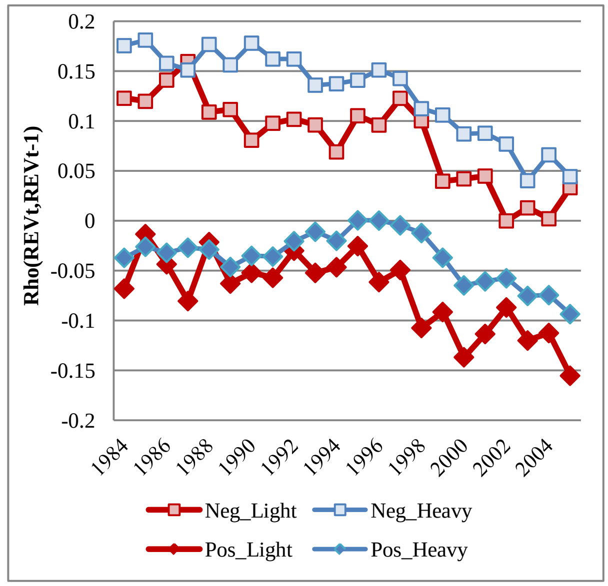
Figure 1: Serial Correlation in Analyst Revisions

Every year and for each stock, we separately estimate the upward autocorrelation (*Rho*^{UP}) between positive REV_{t-1} and REV_t and the downward autocorrelation (*Rho*^{DOWN}) between negative REV_{t-1} and REV_t, using a rolling window of four years. A minimum number of 20 data points is required to estimate a meaningful correlation. The average *Rho*^{UP} and *Rho*^{DOWN} across all stocks from 1984 to 2005 are plotted in Panel A. Each year we divide all stocks into two groups with heavy or light coverage based on the median number of analyst providing earnings estimates in June. In the same way, we also assign each stock to low- or high- institutional holding groups based on variable *INST* median and big or small groups based on AMEX/NYSE size median. Panel B, C and D plot the time series average of the Spearman Rho^{UP} and Rho^{DOWN} by size, analyst coverage and institutional holding groups.

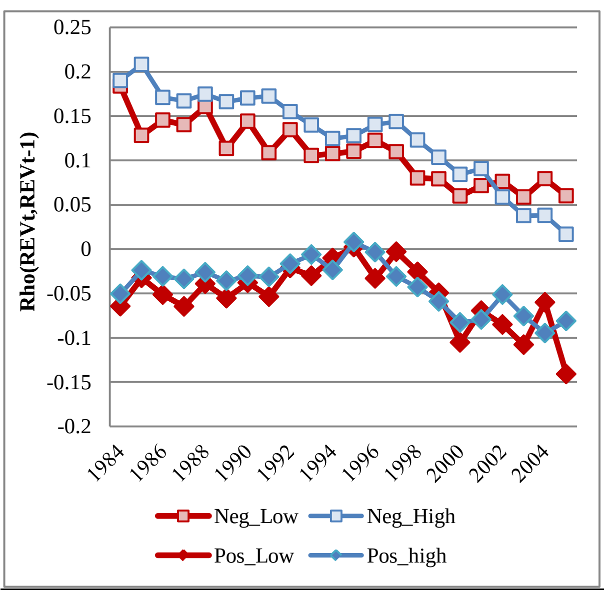
Panel A: In Positive and Negative Revisions



Panel B: Spearman Correlation By Analyst Coverage



Panel C: Spearman Correlation By Institutional Holding



Panel D: Spearman Correlation By Size

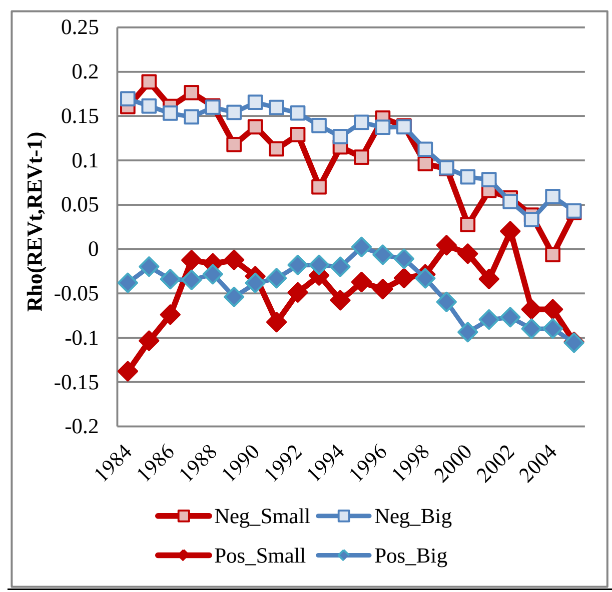
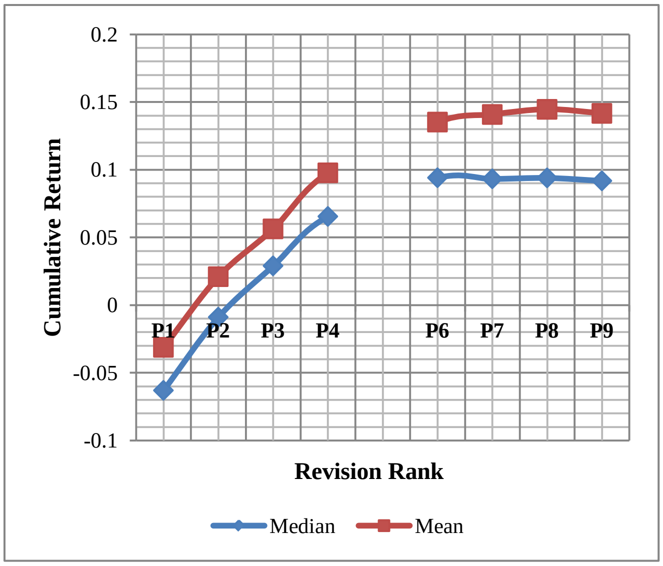


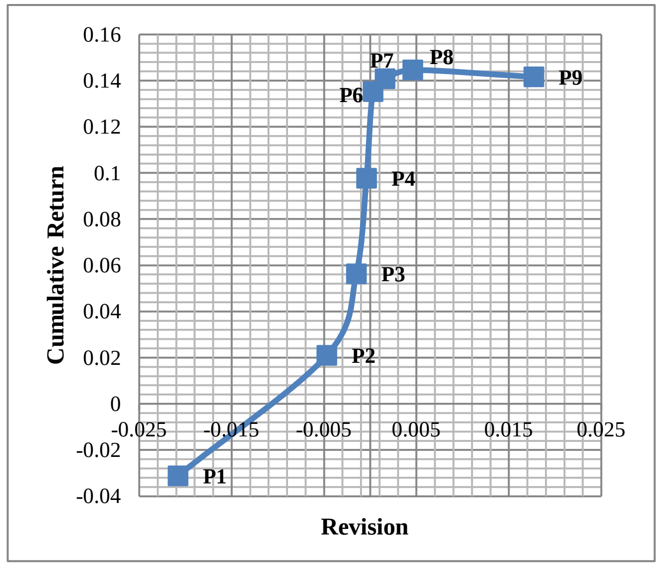
Figure 2: Past and Future Returns of Revision Portfolios

Each month, we divide our sample of firms into 4 quartiles based on their REV_t from low to high within REV^- (REV^+), with P1(P6) containing the lowest revision stocks and with P4(P9) containing the highest revision stocks. REV_t is month on month change in analysts' consensus (mean) earnings forecast. Panel A plot the average past six-month cumulative of eight portfolios in REV^+ (P1-P4) and REV-(P6-P9). Panel B shows an X/Y scatter plot of the average revisions vs. average cumulative return in past six month for each of the REV portfolios for the entire sample period from January 1983 to March 2008.

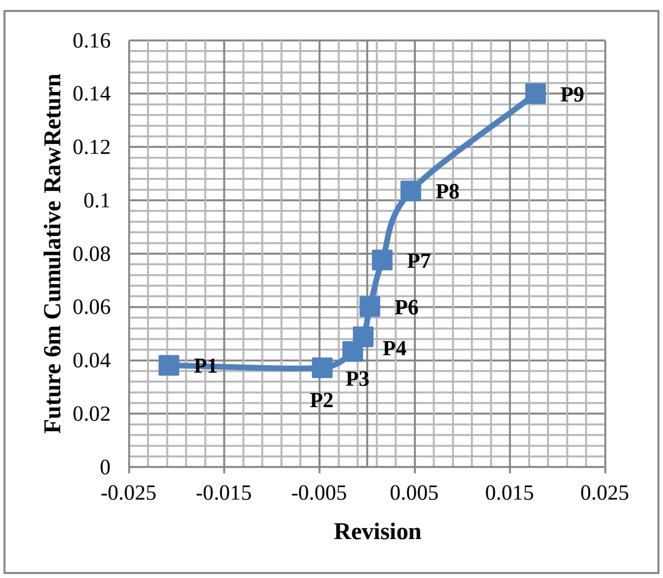
Panel A: Mean and Median Past Returns of Revision Portfolios



Panel B: Mean Past Returns vs. Magnitude of Revisions



Panel C: Mean Future Raw Returns vs. Magnitude of Revisions



Panel D: Mean Future Excess Returns vs. Magnitude of Revisions