Corporate Investment and Analyst Pressure

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Abstract

This paper empirically investigates whether executives alter capital budgeting decisions to meet or exceed analysts' earnings per share (EPS) consensus forecasts. I find that (i) firms reduce investment when analyst pressure to increase EPS is high and that (ii) firms increase their likelihood to meet or beat analyst EPS consensus forecasts by reducing investment. Investment has a direct impact on EPS through depreciation expenses and collateral costs. The observed reduction in investment to meet forecast targets occurs primarily within firms with better investment opportunities. This pattern is consistent with the passing up of valuable investment opportunities in response to analyst pressure.

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This paper explores alterations to capital budgeting decisions to meet or beat financial analysts' earnings forecasts. Meeting or beating analysts' earnings per share (EPS) forecasts is important to managers, as any failure to do so results in large negative abnormal returns (Skinner and Sloan (2002), Kinney, Burgstahler, and Martin (2002)). As a result, many U.S. companies misrepresent financial information or manage analysts' expectations downwards to meet or exceed analysts' EPS forecasts. For example, Degeorge, Patel, and Zeckhauser (1999) find that the distribution of earnings forecast errors exhibits patterns strongly suggestive of earnings or expectations management to reach earnings targets set by analysts.

Earnings or expectations management, however, may only be the tip of the iceberg. Jensen and Fuller (2002) argue that the *"expectations game"* that is prevalent in the U.S. induces CEOs to take short-term oriented business decisions that are costly for the firms and their shareholders. According to the authors, managers all too often conform to excessively aggressive analysts' EPS forecasts, and accept external expectations as targets to achieve. As a result, firms often take value-destroying business decisions, e.g. bad investment or mergers and acquisitions, for the sole sake of meeting or exceeding aggressive external expectations. While Jensen and Fuller (2002) only support their conjecture with casual evidence, Graham, Harvey, and Rajgopal (2005) find, in a survey of 401 U.S. CFOs, that a majority of CFOs admit to adhere to such practices. They find that 55% of the CFOs in the survey declare themselves ready to "delay starting a new project even if it entails a small sacrifice in value" to meet their desired short-term earnings target.

In this paper, I empirically investigate whether managers alter corporate budgeting decisions to meet or beat analysts' consensus EPS forecasts. To do so, I test the hypotheses that firms under high analyst pressure to increase EPS reduce investment, and that firms that reduce investment increase their probability of meeting or beating the analysts' EPS consensus forecast. I find strong evidence consistent with both hypotheses.

To measure the pressure exerted by analysts on management, I build proxies using two different strategies. In a first step, I measure the level of EPS growth expected by analysts at the

start of the year to get "raw" analyst pressure proxies. I use the former variables to define measures of "abnormal" level of analysts' EPS expected growth, controlling for firm characteristics, firm past performance and expected EPS growth in the industry.

I use an unbalanced panel of U.S. firms covered by analysts over the period 1981-2005 using data from the merged CRSP-Compustat Industrial database and I/B/E/S. I test two different econometric specifications corresponding to the two hypotheses presented above. The first specification is a capital investment model where I regress corporate investment on proxies for analyst pressure, and a number of standard controls in the investment literature. In addition to investment opportunities, contemporaneous cash flows, and financial constraints, I also control for stock price misvaluation, analyst coverage, firm size, firm risk, and the firm's past profitability. The second specification is a fixed effects logit model where I regress a dummy for non-negative earnings surprises on corporate investment, and a number of standard controls in the earnings surprises literature. I control for macroeconomic, industry, and firm specific shocks, earnings management, past performance, firm size, firm risk, news arrival, and uncertainty in the forecasting environment.

The results of this analysis support the above hypotheses and are economically important. Firms that face high analyst pressure at the start of the year decrease their investment by 2% to 7% relative to median capital expenditures over time. In addition, firms that reduce capital expenditures by one standard deviation increase the probability of meeting or beating analysts' consensus forecasts by twice as much as when they increase accruals by one standard deviation. The latter result suggests that capital budgeting decisions may be more effective than accounting manipulations to create positive EPS surprises.

The investment behavior I find rests on two main mechanisms: (i) corporate investment has a direct impact on a firm's earnings through increased depreciation and costs. I find that a reduction in investment by one (within-firm) standard deviation results in an estimated increase of 50% in mean net income through the depreciation channel. In addition, an increase in investment is also

associated with increased collateral costs, e.g. leases, labor, and advertising expenses. (ii) Analysts fail to anticipate the impact that the reduction (increase) in investment has on EPS. In my dataset, I find that they do not properly use the available investment data from previous periods, i.e. previous quarters or previous fiscal year, to forecast EPS in the subsequent period.

To address endogeneity concerns about the negative correlation between investment and earnings surprises, I investigate an alternative explanation: analysts might be too pessimistic about firms experiencing a negative shock that simultaneously impacts investment. Earnings surprises would then occur more often when investment is reduced, but would not be caused by investment reduction. This negative shock might be caused by an economic downturn, or by a managerial decision to cut all costs (e.g. firm restructuring). Such negative shock should be captured by large downward analyst forecast revisions during the fiscal year, as analysts update their forecasts when bad news is disclosed or anticipated. Furthermore, Chaney, Hogan, and Jeter (1999) find that analysts revise forecasts downwards after restructuring decisions are announced. I find that bad news firm-year observations do not drive the negative correlation between investment and earnings surprises, as this correlation remains robust to the inclusion of an interaction term between corporate investment and proxies for bad news arrival in the year. Furthermore, the negative correlation between investment and earnings surprises is also robust to the exclusion of all bad-news firm-year observations in my sample. These results are consistent with the earnings surprise literature that finds that analysts underreact to bad news arrival during the contemporaneous year (Elliott, Philbrick and Weidman (1995)), in the previous year (Easterwood and Nutt (1999)), and to restructuring news (Chaney, Hogan, and Jeter (1999)).

Finally, to rule out concerns about the direction of causality between investment and earnings surprises, I use quarterly data from I/B/E/S and Compustat, and find that meeting or beating consensus forecasts in the last quarter of a fiscal year is negatively correlated with investments in previous periods. Earnings surprises for the year are also negatively correlated with investment in the previous fiscal year.

An interesting question is whether the reduction in investment induced by managers' fixation on consensus forecasts is beneficial or detrimental to shareholders. It will be beneficial to shareholders if the observed reduction in investment corresponds to a reduction in overinvestment (e.g. empire building, pet projects). Conversely, it will be detrimental to the shareholders if this reduction in investment corresponds to an increase in the underinvestment problem, i.e. if it results in the passing up of valuable investment opportunities. To address this issue, I rank firms by the size of their investment opportunity set, as proxied by the firms' Tobin's Q. I find that firms with average to good investment opportunities that decrease investment are more likely to beat consensus forecasts than firms with bad investment opportunities. In addition, firms with better investment opportunities decrease (increase) their investment more when they are under high (low) analyst pressure to increase EPS.

Why do managers use such costly earnings management device relative to alternative instruments? Surprisingly, I find that CEOs use investment to manage earnings on a regular basis, not necessarily when other earnings management tools have been exhausted. Furthermore, I find no difference in the use of investment as an earnings management device between the early and late years of my sample period, suggesting that the recourse to investment is not the consequence of the recent increased scrutiny on financial accounts. I argue that widespread investment management, despite its apparent large costs, may be explained by the additional advantages that it offers to managers. An outsider cannot observe the investment opportunities that have been given up or postponed to inflate EPS, whereas the outsider can more easily observe accruals management or expectations management ex-post. Managers may reduce the risks of earnings management practices being publicly exposed when they reduce investment; they also avoid any litigation risk associated with such illicit practices. Information asymmetries may be a key reason why investment manipulation seems to be so widely used to create earnings surprises.

This paper contributes to the literature in several respects. First, it adds to the large existing investment literature by pointing to the adverse influence financial analysts' forecasting activity

may have on investment decisions. Stein (1989) claims that fully efficient stock markets may induce managers to select low-NPV projects with high short-term returns over high-NPV projects with long-term returns. In contrast, I find that financial analysts' pressure induces changes in the *level* of corporate investment, a cruder, but perhaps more striking behavior than the author suggests. Second, this work adds to the recent corporate finance literature linking financial analysts' coverage with firms' corporate finance decisions. Chang, Dasgupta and Hilary (2006) and Doukas, Kim and Pantzalis (2006) study the influence of analyst coverage on financing and investment decisions, while Li and Zhao (2006) document the analysts' impact on dividend policy. These studies conclude that analysts reduce information asymmetry between managers and the stock market, and that analysts have a beneficial influence, in the sense that they lessen financial constraints on firms. On the other hand, Doukas et al. (2006) argue that excess analyst coverage results in overinvestment. In contrast, I find results consistent with analysts exerting adverse short-term pressure, and inducing underinvestment. Third, this paper adds to the large existing earnings surprises literature by pointing to a new variable through which managers create non-negative earnings surprises. The literature had previously identified accruals management (Brown (2001)), discretionary expenses management (through R&D (Bushee (1998)), swaps (Faulkender and Chernenko (2006)), and pension accounting and investment management (Bergstresser, Desai, and Rauh (2006))), sales management (Roychowdhury (2006)), and forecasts management (Matsumoto (2002)) as levers through which firms surprise the stock market. To the best of my knowledge, the finance or accounting literature has never previously considered investment in fixed assets as an earnings management tool. Penman and Zhang (2002) recognize the impact investment has on earnings, but they do not consider investment as an earnings management device[1]. Finally, this work supports the survey findings of Graham, Harvey, and Rajgopal (2005), in which managers recognize they are willing to reduce investment to meet their desired earnings benchmarks. As the authors rightfully acknowledge, findings from their survey can only represent "beliefs" from the

[1] The authors find that decreases (increases) in investment increase (decrease) earnings, and that changes in investment policy decrease the quality of earnings as a predictor of future stock market returns.

surveyed CFOs. This paper suggests that these beliefs actually translate in observable investment reduction, and that managers do succeed in creating earnings surprises when they reduce investment.

The paper is organized as follows: section I develops the main working hypotheses and the corresponding empirical strategies, and section II briefly describes the data and variables. Section III presents the main empirical results, while section IV discusses robustness checks and additional tests. Section V concludes.

I. Hypotheses and Methodology

A. Hypothesis development

I rely on three arguments to justify my working hypotheses. (i) Corporate investment has a direct impact on a firm's earnings, (ii) managers care about the EPS forecast threshold, and (iii) analysts do not properly take into account the effect of investment on EPS when they forecast it.

There are two reasons why corporate investment has a direct impact on a firm's earnings. The first reason is that, for most classes of investment, investment projects produce little in the way of earnings in the year they are initiated. Consider a firm that plans to start new operations, e.g. a plant or a retail store. Revenues generated from the plant or store will materialize in later periods, because it takes time to generate sales early in the project life. On the other hand, investment projects are usually associated with a ramp-up phase during which costs that appear in the income statements need to be incurred immediately. In a plant or a retail store project, managers need to hire and train new workers of the plant or store; they also need to lease, not purchase, some of the equipment and property required for the project. In addition, managers may want to promote the new products manufactured or the retail store, generating advertising expenses. The following excerpt from the 2006 Apple 10K report illustrates the above discussion. In this example, an increase in capital expenditures related to an aggressive strategy of retail stores development leads to additional costs that the company needs to incur immediately.

"Through September 30, 2006, the Company had opened 165 retail stores. The Company's retail initiative has required substantial investment in equipment and leasehold improvements, information systems, inventory, and personnel."

"[…] A relatively high proportion of the Retail segment's costs are fixed because of personnel costs, depreciation of store construction costs, and lease expenses."

Apple 10K report, September 2006

The above excerpt suggests that investment in fixed assets generates several collateral cash expenses: labor, advertising, leases expenses; but it also involves depreciation costs. Depreciation is a non-cash cost that depends directly on the level of past and contemporaneous investment in fixed assets. Capitalized fixed assets that have not been fully depreciated still generate depreciation expenses up until the end of their depreciation period, their assumed useful economic life. The assumed economic life is based on strict accounting conventions for each class of asset, yet managers generally have some flexibility with respect to this choice. Capital expenditures generate depreciation expenses in the same fiscal year, generally in proportion to the number of months separating the date of purchase from the fiscal year end date[2]. Section IV.B. empirically investigates the economic impact that such a direct effect has on net income. The depreciation effect on earnings appears to be economically large and significant, suggesting that altering investment decisions has a large impact on EPS.

Managers who launch new projects may not generate large immediate revenues while they may increase their firm's cost base. Therefore, investing in such projects could put at risk the firm's ability to meet or beat the financial analysts' EPS forecasts for the period considered, and probably also for later periods. If meeting financial analysts' consensus forecasts is important to the CEO, and if she further faces the risk of missing the consensus EPS forecast as a result of launching the project, she may well be tempted to either postpone the investment to a later period, or to cancel it

[2] The influence of corporate investment on depreciation expenses depends on several factors, like the depreciation method that is used (straight-line, or accelerated depreciation), the class of fixed assets that have been acquired, the estimated salvage value of the assets at the end of the useful life, and various other exemptions and options left at the discretion of managers.

altogether. The assumptions described in this hypothetical store or plant project are supported by findings from Graham, Harvey, and Rajgopal (2005) in a survey of 401 U.S. firms' financial executives. The authors find that 55% of interviewed CFOs are ready to postpone investment in the interest of meeting a desired earnings target, and that another 80% are ready to decrease discretionary spending such as R&D, advertising and maintenance expenses with the same objective in mind. Managers also seem less keen to use accounting manipulations within "Generally Accepted Accounting Principles" than outright value-destroying decisions in order to attain earnings benchmark. The authors interpret this finding by arguing that managers may be unwilling to disclose such practices in the context of the post-Enron scandal. I will later propose a different interpretation based on similar findings over the period ranging from 1981 to 2005. Furthermore, Penman and Zhang (2002) find that decreases (increases) in investment create higher (lower) earnings when firms adopt conservative accounting methods.

The second argument is that earnings are an important metric to managers, and that they care about them. Graham, Harvey, and Rajgopal (2005) report that CFOs overwhelmingly consider EPS as the most important metric for firm performance, despite the strong emphasis of cash flow in the academic finance literature. Over 50% rank earnings as the most important measure reported to outsiders, against 12% for free cash flows, and 12% for cash flows from operations. Managers perceive that the stock market will heavily penalize their firm's stock price should they fail to reach certain EPS thresholds. Skinner and Sloan (2002), and Kinney, Burgstahler, and Martin (2002) find that firms that fail to meet analysts' forecasts suffer large negative price reactions. According to Graham, Harvey, and Rajgopal (2005), CFOs believe that meeting such earnings benchmarks helps build the credibility with the stock market and the external reputation of the management.

Based on these two arguments, I test the hypothesis that managers respond to analyst pressure exerted early in the fiscal year.

Hypothesis H1 (Analyst Pressure Hypothesis): *Firms under high analyst pressure to increase EPS reduce investment.*

Firms facing high analyst pressure are firms that start the fiscal year with an analysts' EPS consensus forecast that is too high relative to a "normal" level. To determine a "normal" level, I establish the EPS growth predicted by forecast EPS growth in the same industry, the firm's past performance and firm characteristics.

Implicitly, in H1, I assume that analysts provide a cue to managers that creating positive earnings surprises at the end of the year is going to be difficult. High analyst pressure should be, or should be believed by managers to be, negatively correlated with positive EPS surprises. However, testing H1 does not answer whether or not the managers' response to increased analyst pressure is justified. Do managers actually influence earnings surprises by reducing investment?

To address this issue, I need a third argument that analysts do not anticipate the increase in earnings due to the cancellation or the postponement of project investments. Indeed, for investment cancellations or postponements to have any effect on earnings surprises, and not just on earnings, analysts must not fully anticipate the increase in earnings caused by investment decisions. This will happen either if financial analysts are not able to observe the investment decisions, an unlikely proposition, or if they do not fully capture their effects on EPS. Empirically, I find that analysts do not incorporate past periods of investment in forecasting EPS for subsequent periods: past investment is negatively correlated with EPS surprises in subsequent periods (see section III.D.).

Based on this explanation, I propose to test the following hypothesis:

Hypothesis H2 (Investment Manipulation Hypothesis): Firms that reduce investment increase their likelihood to meet or beat analysts' EPS consensus forecasts.

B. Empirical Strategies

To test Hypothesis H1, which states that firms will respond to excessive forecast EPS growth by cutting investment, I use standard investment specification equations on unbalanced panels. I regress *Capital expenditures* on the *Analyst pressure* variable, and standard controls in the investment literature. I use firm fixed effects to control for time-invariant firm heterogeneity, as in previous corporate investment studies (Baker, Stein and Wurgler, 2003, and Chen, Goldstein and

Jiang, 2007). I also add year fixed effects to the specification and, following Petersen (2007), I allow for within-firm autocorrelation and heteroskedasticity of the standard errors. The corresponding baseline equation, in which subscripts *i* and *t* respectively represent the firm and the fiscal year, is as follows:

$$Capital\ expenditures_{it} = \alpha_t + \eta_i + \beta.\,Analyst\ pressure_{it} + \mu.CONTROLS_{it} + \delta.CONTROLS_{it-1} + \varepsilon_{it} \quad (1)$$

This specification allows me to measure the effects of the *Analyst pressure* variables exerted early in the year on the investment policy for the fiscal year. According to Hypothesis H1, I expect β to be negative. Note that, the *Analyst pressure* variable and other RHS variables are measured early in year *t* (or before that) while investment decisions are taken throughout the same fiscal year.

To test Hypothesis H2, I use a panel logit specification. I regress a dummy variable for meeting or beating the analysts' consensus forecast on corporate investment and various standard control variables used in the literature. I take advantage of the dataset's panel structure to control for the unobserved time-invariant firm heterogeneity, running all logit regressions with firm fixed effects. I also add year fixed effects to control for time-variant unobserved heterogeneity. Wooldridge (2002, p. 491) argues that the logit panel regression with fixed effects is the least restrictive specification for binary response models with panel data. It does not make any assumption about the relationship between the unobserved heterogeneity and the independent variables, contrary to random effects specifications[3]. The baseline equation for this specification is presented below:

$$\Pr(Non\text{-}negative\ EPS\ surprise_{it} = 1) = \Lambda(\alpha_t + \eta_i + \gamma.\,Capital\ expenditures_{it} + \lambda.CONTROLS_{it} + \varphi.CONTROLS_{it-1} + \varepsilon_{it}) \quad (2)$$

where *Non-negative EPS surprise*$_{it}$ is a dummy variable equal to one if the reported EPS for the fiscal year *t* of firm *i* is larger than or equal to the last median EPS analyst forecast, and equal to zero otherwise, $\Lambda(.)$ is the logistic cumulative distribution function, β is the column coefficient

[3] I do not use probit panel regressions with fixed effects because they suffer from inconsistent parameters estimation (Wooldridge, 2002, p.484). Probit panel regressions with random effects, like the logit with random effects models, suffer from the assumption of independence between the unobserved effects and independent variables and the normality assumption on the unobserved effects, "strong assumptions" according to Wooldridge (2002, p.485).

vector, ε is the error term, and X is the sample observations matrix. If Hypothesis H2 is true, the coefficient on γ will be negative. I allow for within-firm autocorrelation, with standard errors clustered at the firm level, and also allow standard errors to be heteroskedastic.

This specification is potentially subject to endogeneity problems. I discuss and address this issue in section III.D.

II. Data and Variables

I construct the dataset from three main sources. The sample consists of U.S. firms listed in the merged Center for Research on Security Prices (CRSP) - Compustat Industrial Annual database[4] at any point in time between 1981 and 2005. I exclude financial services firms (SIC code 6000-6900), regulated utilities (SIC code 4900), firms with book values smaller than $10 million, and firms with no analyst coverage (i.e. not present in the I/B/E/S Historical Summary Files). I winsorize all variables except *Firm Age* and *Analysts* at the first and ninety-ninth percentile. This helps mitigate the impact of outliers and measurement errors in the data.

I obtain data on analyst coverage, EPS consensus forecasts, and EPS realizations from the I/B/E/S Historical Summary Files. I use the I/B/E/S files that are unadjusted for stock splits: these files are free of the important rounding errors first identified by Diether, Malloy and Scherbina (2002) in the I/B/E/S adjusted files[5]. The unadjusted-for-stock-splits I/B/E/S files require additional processing to properly account for stock splits between the date the consensus EPS forecast is recorded and the EPS announcement date. I follow the procedure recommended in WRDS by Robinson and Glushkov (2006).

The full sample includes 65,221 firm-year observations for an average of 2,609 observations per year from 1981 to 2005. Before looking in details at the empirical strategy, I turn to the

[4] I also use the CRSP – Compustat Industrial Quarterly database that I merge with the main database to obtain quarterly data for all firm-fiscal year observations, when available.

[5] Such errors would introduce measurement errors for earnings surprises: firms may be wrongly classified as generating non-negative earnings surprises when they are actually creating negative earnings surprises.

construction of the main variables used in the baseline analysis. I describe control variables in more details below.

Measures of Analyst Pressure

I construct four measures of the level of analyst pressure exerted on managers. These variables measure the level of analysts' expected increase in EPS. They measure whether managers face high or low EPS forecasts at the start of the year relative to EPS in the previous year. I use two different approaches to construct these proxies. First, I use two raw measures of the analysts' expected EPS growth at the start of the year. The first raw measure is the level of increase (or decrease) in EPS that is forecast by analysts relative to last year's realized EPS. I use the first forecast issued after the announcement date of the last year's EPS. This measure, *Forecast EPS change1*, is scaled by stock prices 90 to 120 days before last year's EPS announcement[6].

$$Forecast\ EPS\ change1 = (EPS_t\ forecast_{start\ of\ year\ t} - actual\ EPS_{t-1})/Stock\ price_{t-1-90days}$$

The second raw measure, *Forecast EPS change2*, is similar to the previous one in all respect, except that it measures the forecast EPS change relative to the last analysts' consensus EPS forecast for the previous year, before the reporting of the actual EPS in the previous year:

$$Forecast\ EPS\ change2 = (EPS_t\ forecast_{start\ of\ year\ t} - EPS_{t-1}\ forecast_{end\ of\ year\ t-1})/Stock\ price_{t-1-90days}$$

[Insert table 1 about here]

In the second approach, I derive two alternative proxies from these raw measures, measuring the abnormal level of analyst forecast increase. A potential problem with *Forecast EPS change1* and *Forecast EPS change2* is that they are correlated with past firm performance and firm characteristics (see Table 1). Analysts tend to be optimistic about firms with low investment opportunities and low past performance. Furthermore, analysts' EPS forecasts are correlated across industries. Analysts predict higher EPS increases for firms that, in the previous year, had low Tobin's Q, negative EPS, low cash flow, large financial constraints, low analyst coverage, high

[6] Stock prices are taken from I/B/E/S to ensure consistency with the stock split adjustment process relative to EPS forecasts and EPS realizations. They are recorded in I/B/E/S at the date when analysts' median forecasts are recorded, i.e. the Thursday that falls between the 14th and 20th of each month. Hence the 30 days variability in stock price date relative to the 90 days prior to EPS reporting date.

forecast EPS increase in the same industry (at the 3 digit SIC code level), small size, negative earnings surprises in the previous year, and for which analysts predict a turnaround, i.e. EPS was negative in the previous year but is expected to be positive in the current year. To control for all these effects and introduce two measures of the *abnormal* level of analyst forecast EPS increase, I regress *Forecast EPS change1* and *Forecast EPS change2* on these variables. Table 1 presents the results of these panel regressions in which the panel unit is the firm, and year fixed effects are included[7]. When I take the residuals of these regressions, I obtain the within-firm *Analyst Pressure1* and *Analyst Pressure2* variables that measure abnormal pressure by analysts. By definition, *Analyst Pressure1* and *Analyst Pressure2* are orthogonal to all the variables included in the panel regression. They will be positive if the analysts' forecast increase in EPS is high relative to past firm performance, firm characteristics and industry prospects. Managers will thus face abnormally high analyst consensus EPS forecast at the start of the year in that case. Conversely, *Analyst Pressure1* and *Analyst Pressure2* will be negative if the analyst forecast increase in EPS is low relative to past firm performance and characteristics. Managers will thus face abnormally low analyst consensus EPS forecasts at the start of the year in that case. I expect these proxies to be negatively correlated with investment, other things being equal (Hypothesis H1). Indeed, I posit that analyst pressure is a cue that positive earnings surprises are less likely at the end of the year, unless managerial actions, such as corporate investment reduction, are undertaken.

Analysts' Consensus Forecast

I construct the variable *Non-negative EPS surprise* as a dummy variable that is equal to 1 if the firm's EPS is larger than or equal to the analysts' consensus forecast and is equal to 0 otherwise. A dichotomous variable makes sense in this analysis because managers care about meeting or beating the threshold of the analysts' EPS consensus forecast. The baseline analysts' consensus forecast is defined as follows. For each month before the reporting of the actual EPS, the I/B/E/S Historical

[7] The R^2 of these regressions are relatively high at 51% and 46% respectively, thus explaining a large portion of the variation in the raw measures of expected EPS changes. All results are robust to the alternative use of simple OLS regressions instead of panel regressions.

Summary Files provide a median of the analysts' EPS forecasts for the fiscal year. I use the latest median I/B/E/S EPS consensus forecasts before the current fiscal year report date. This measure of the analysts' EPS consensus forecast is common in the literature. Other authors use the latest individual analysts' EPS estimate before the reporting of the EPS. As a robustness check, I use this alternative measure of EPS forecasts to define my positive earnings surprise variable and find similar results.

Investment

I construct the main measure of corporate investment, *Capital Expenditures*, as capital expenditures (Compustat item 128) scaled by beginning-of-the-year total assets (item 6)[8]. If CEOs reduce investment to meet earnings forecasts, CEOs probably would like to hide this reduction in investment from the financial community. They might manipulate their accounts, to conceal the fact that they are investing less than what they should. Therefore, I am particularly concerned about possible accounting manipulations by CEOs to hide distortions in their capital budgeting decisions. To avoid such distortions being present in my variable of choice, I only use a cash measure of investment that is less susceptible to accounting manipulations. I exclude measures of investment such as capital expenditures plus research and development expenses, the baseline variable in Chen, Goldstein, and Jiang (2007), because R&D is a noisier variable of investment, for which managers have more accounting creativity leeway. R&D expenses have been shown in the literature to be susceptible to accounting manipulation (see e.g. Bushee (1998)), and much flexibility is left to managers to compute this expense[9]. Likewise, measures such as year-to-year changes in total assets are also excluded from the analysis because they include all sorts of assets, including accruals. Accruals have been shown to be an important vehicle for earnings management: an increase in

[8] All the results still hold when investment is measured as ratio of lagged gross property plant and equipment (item 7).

[9] In addition, the R&D expense item in *Compustat* mixes together acquired R&D (In-Process R&D, IPR&D), which is often measured according to some estimate of its future value, with actual R&D expenditures for the year. The value of acquired R&D and the write-off of such intangible assets have dramatically increased in the 1990s, leading to increased scrutiny by the SEC at the end of the decade. In a number of acquisitions, the acquirers have written off significant portions of acquisition cost as IPR&D (e.g. when IBM purchased Lotus in 1995, it valued the acquired R&D at $1.800 billion. IBM's total *Compustat* reported R&D increased from $3.382 billion in 1994 to $5.227 billion in 1995. Prior to its acquisition, Lotus reported an R&D expenditure of only $256 million.)

accruals is positively correlated with firms meeting or beating analysts forecasts (e.g. Brown (2001), Matsumoto (2002)).

[Insert table 2 about here]

All these variables and the main control variables used in the analysis are described in Table 2.

III. Corporate Investment, Analyst Pressure and Earnings Surprises

A. Summary Statistics

[Insert Table 3 about here]

[Insert figure 1 about here]

Table 3 reports the summary statistics for the whole sample of 65,221 firm-year observations.

Figure 1 Panel A exhibits the time series of the median *Capital expenditures* conditioning on the earnings surprise at time t[10]. In year t the median investment ratios of firms with non-negative EPS surprises at time t is only slightly larger than for firms that miss the consensus. But Panel B of Figure 1 shows that these firms have much better investment opportunities, and as such, should invest much more.

What is striking in this graph is the investment reversal pattern for firms that are above analysts' expectations at time *t*. They invest less than the other group of firms between year *t-3* and year *t-1*, while they invest much more from year *t+1* to year *t+3* and then invest less from year *t+4* onwards.

This suggests that earnings surprises may contain information about the firms' future prospects: firms with positive earnings surprises tend to perform well afterwards, while firms with negative surprises tend to perform less well. This is confirmed by Panel B of Figure 1 that exhibits the evolution of lagged Tobin's Q for the same cross-section of firms.

[10] I also condition on the availability of the whole time series to get a complete time series for each firm-year observation. The median *Capital expenditures* of each group (negative EPS surprise group or non-negative EPS surprise group) is computed relative to the overall sample median, a percentage of *Total Assets*.

Panel B of Figure 1 is consistent with managers reducing investment to meet or beat analysts' consensus forecasts. Managers may plan earnings surprises ahead by keeping investment levels artificially low, and, afterwards, catch up postponed investments.

This investment pattern could also be explained by bad past economic conditions followed by an unforeseen economic recovery in the year in which the firm exceeds analyst forecasts. It could also suggest that earnings surprises occur in industries at certain points in time in the economic cycles. Firms in industries that recover from previous sluggish market conditions could positively surprise the market. Therefore, when I perform the multivariate analysis, I need to control for such plausible explanations.

B. Do Firms Respond to Analyst Pressure by Reducing Investment?

I now move to the analysis of Hypothesis H1, the Analyst Pressure Hypothesis. It states that firms facing high pressure from analysts, in the form of high EPS consensus forecasts at the start of the year, invest less all else being equal. Table 4 reports the results from estimating equation (1) on my sample of firms, using *Capital expenditures* as the dependent variable and the four proxies of analyst pressure in all specifications.

[Insert table 4 about here]

Column 1, 4, 7 and 10 of Table 4 estimate a simple model with traditional controls in the investment literature. All variables are defined in details in Table 2. *Tobin's Q* controls for the firm's investment opportunity set, and is defined as in Baker, Stein and Wurgler (2003). In addition, following Fazzari, Hubbard and Petersen (1988) who argue that corporate investment is sensitive to the availability of internal funds, I include contemporaneous cash flow (*Cash Flow*) as control. Chang, Dasgupta, and Hilary (2006), and Doukas, Kim, and Pantzalis (2006) find that analyst coverage positively influences equity issues and investment. I include analyst coverage as control, and define *Analysts* as the number of analysts issuing a fiscal year *t-1* EPS forecast for the firm in the *I/B/E/S Historical Summary Files.* I control for firm past performance, with *Past profitability,* defined as last year's return on assets, and firm size using the logarithm of lagged *Total Assets.*

Column 2, 5, 8 and 11 of Table 4 add a control for financials constraints, in the form of a modified *Kaplan and Zingales (1997) index*, and an interaction term between this control and lagged *Tobin's Q*. These variables control for financially constrained firms investing less than unconstrained firms (Kaplan and Zingales (1997)), and financially constrained firms having corporate investment policies that are more sensitive to stock price variations (Baker, Stein, and Wurgler (2003)). Constrained firms invest more when stock prices are high and less when stock prices are low. I follow Baker, Stein, and Wurgler (2003) in constructing a modified version of the index that excludes *Tobin's Q* to avoid any spurious correlation in the specifications. The variable is defined as follows:

$$\textit{Kaplan and Zingales (1997) index} = -1.002\ \textit{Cash Flow} - 39.368\ \textit{Dividends} - 1.315\textit{Cash} + 3.139\ \textit{Leverage}$$

All variables are lagged. Baker, Stein, and Wurgler (2003), Chen, Goldstein, and Jiang (2007) use this index to capture the effects of financial constraints on corporate investment in a world of costly external finance[11]. Lower values of the index capture firms with low financial constraints whereas higher values of the index stand for highly financially constrained firms. I also add a proxy for firm age, and a proxy for the tangibility of assets. Firms at early stages of their development are expected to invest more than mature firms, while firms with a large proportion of tangible assets may invest more than firms with intangible assets.

Finally, I add a control for stock price misvaluation in column 3, 6, 9 and 12. Indeed, as found in Baker, Stein, and Wurgler (2003), firms invest more when overvalued, i.e. when they have low future excess stock returns. *Baker, Stein and Wurgler (2003)'s undervaluation* is computed as the difference between the three year firm's cumulative stock return from year t+1 to year t+3 from *CRSP* and the stock market three year cumulative return.

Overall, the coefficients of my analyst pressure proxies are negative and significant at the 1% level in all specifications. Economically, the coefficients suggest that a one (within-firm) standard

[11] The results remain robust to the use of an alternative measure of financial constraints as presented in Cleary (1999).

deviation in analyst pressure at the beginning of the year is associated with a reduction in investment of 0.10% to 0.39% of total assets, depending on the econometric specification[12]. It represents a decrease of 2% to 7% of median corporate investment or a decrease of 1% to 4% of mean corporate investment[13]. Note that all the results concerning the analyst pressure proxies remain at the same significance levels when I bootstrap the standard errors, therefore taking into account that two of the analyst pressure variables are residuals from previous regressions. The signs of coefficients on the control variables are as expected, and consistent with previous results from the investment literature.

C. Do Firms Increase the Likelihood to Create Positive Earnings Surprises by Reducing Investment?

I now test whether a reduction in investment results in a higher likelihood of meeting or beating analysts' consensus forecasts. According to Hypothesis H2, the Investment Manipulation Hypothesis, I expect to find a negative correlation between corporate investment and positive earnings surprises. Based on previous studies on earnings surprises, I include several control variables in equation (2) to control for earnings management, macroeconomic, industry and firm specific shocks, firm past performance, firm size, firm risk, news arrival and uncertainty in the forecasting environment. Table 5 - Panel A presents the results of these regressions[14].

[Insert Table 5 about here]

Prior research documents that unexpected macroeconomic shocks affect earnings surprises (O'Brien (1988)). Year-fixed effects provide control for general macroeconomic shocks in all specifications.

[12] The lowest estimated investment change corresponds to model 8 in Table 4 column 8, while the highest estimated investment change corresponds to model 1 in Table 4 column 1.

[13] The effect is symmetric for firms with negative analyst pressure and positive analyst pressure. In results not reported here, I find that the coefficients on two variables that interact a dummy for firms with negative or positive analyst pressure with variable *Analyst pressure*, are of opposite sign, both significantly different from zero, and the null hypothesis that they are equal in absolute value cannot be rejected.

[14] The number of firm-year observations is reduced relative to our full sample because the logit regression with fixed effects does not use observations where the dependent variable for the firm observations, *Non-negative EPS surprise*, are either *all* equal to 0 or *all* equal to 1. The reason being that these observations, 5,279 observations for 2,296 firms, do not provide any estimation information.

Table 5 - Panel A, column 1 presents the results for a simple specification. In addition to *Capital expenditures*, I include sales and cash flow to control for firm-specific shocks at the revenue and costs level, the logarithm transformation of *Analysts* and of *Total Assets* to control for the informational environment. Analysts follow large firms more intensively (Bhushan (1989)), and large firms are under higher scrutiny by the investment community. In addition, earnings surprises may be more difficult to create for firms followed by a large number of analysts. Indeed, Degeorge, Ding, Jeanjean and Stolowy (2005) and Yu (2007) find that high analyst coverage reduces accruals management among U.S. firms. I also include *Past profitability* to control for the recovery from bad past economic conditions, as they could explain the earnings surprises, as discussed in section III.A. I also include *Changes in total accruals* to control for earnings management. All variables are computed as described in Table 2, except variable *Changes in total accruals* that I discuss in details in the appendix.

Table 5 - Panel A, column 2 adds controls for the average earnings surprise level in the industry. As discussed previously, the assumed negative correlation between earnings surprises and investment could be explained by earnings surprises at the industry level. Firms in the same industry could perform better than expected by analysts because of unexpected changes in the industry economic cycle, and correlated forecasting errors at the industry level. More specifically, investment could be negatively correlated with earnings surprises because analysts' forecast errors are correlated within industries that experience a downturn.

Table 5 - Panel A, column 3 adds a control for the dispersion of analysts forecasts, *Standard deviation of forecasts*, a control for firms that post positive EPS at the end of the year, and a control for revisions of consensus forecasts over the course of the fiscal year. Firms with high forecasting uncertainty face analysts' EPS consensus forecast that are easier to reach (Matsumoto (2002)). I include a control using the median analyst consensus forecast standard deviation from the I/B/E/S Historical Unadjusted Summary Files to avoid measurement errors (see Diether, Malloy, and Scherbina (2002)). I include a dummy variable for firms that have posted positive EPS in the

contemporaneous year, following Degeorge, Patel, and Zeckhauser (1999) who find that meeting or beating analysts' expectations is less important for firms that incur losses. I also include a proxy for positive news arrival by defining a dummy variable, *Upwards consensus change*, that is equal to 1 if the last analysts' consensus forecast before EPS announcement is strictly larger than the first consensus forecast after the previous fiscal year EPS announcement. Elliott, Philbrick and Weidman (1995) find that analysts underreact to positive and negative news arriving during the forecasting period. As a result, good news should be positively associated with positive earnings surprises while bad news should be associated with negative earnings surprises.

Table 5 - Panel A, column 4 introduces additional controls for firm risk, as proxied by the log transformation of firm age, and a control for value firms, proxied by the ratio of tangible assets to total assets (*Tangibles*). Analysts are likely to forecast EPS with less accuracy for young firms than for older firms. In addition, "glamour" firms are more likely to create earnings surprises than value firms because they may have greater incentives to do so (Degeorge, Patel, and Zeckhauser (2007)).

Table 5 - Panel A, column 5 introduces a control for *Analyst pressure*. As argued earlier, high analyst pressure to grow EPS may be a signal to CEOs that negative earnings surprises are more likely.

Columns 1 to 4 of Table 5 show that the coefficients on investment are negative and significant at the 1% level. Investing less (more) during the year increases (decreases) the likelihood of meeting or beating analysts' consensus forecasts. All coefficients from the control variables are as expected, except *Analyst* that is not significant in columns 3 and 4, and firm size that is not significant in columns 1 and 2.

Table 5 - Panel A, column 5 provides evidence that firms subject to abnormal analyst pressure at the start of the year find it more difficult to create positive earnings surprises. The coefficient on *Analyst pressure* is negative and significant at the 5% level. This result provides a logical link between the two main hypotheses of this study. Managers of firms under high abnormal analyst pressure receive cues that positive earnings surprises will be difficult to achieve in the coming fiscal

year. Therefore, they respond to the cue by reducing investment. This managerial response is rational, since reducing investment increases the likelihood to attain or exceed analysts' consensus EPS forecasts.

The marginal effects of the specification presented in column 4 provide a rough estimation of the *relative* contribution of each variable in the model on the probability to have non-negative earnings surprises. Nevertheless, as pointed out by Wooldridge (2002), interpreting marginal effects in a logit specification with fixed effect is problematic[15]. For the sake of completeness, I nonetheless report them. For example, the marginal effect of a reduction by a one (within-firm) standard deviation in *Capital expenditures* (6.46%) is approximately twice as large (-6.46%*-0.178=1.15%) as the marginal effect of a one (within-firm) standard deviation in *Changes in total accruals* (13.53%) (13.53%*0.043=0.58%). Although the magnitude of the marginal effect in itself is difficult to evaluate, it is important to observe that we find such a strong effect of investment on earnings surprises relative to what has been considered as the main discretionary lever to create positive earnings surprises in the finance and accounting literature. This result suggests that investment is a more efficient earnings management device than accruals.

In order to verify that a discretionary reduction in investment creates earnings surprises through the depreciation channel, I perform the same regressions as the ones presented above, replacing variable *Capital expenditures* with *Depreciation*. I present the results in Table 5 - Panel B. The coefficients on *Depreciation* are negative and significant at the 1% level in all specifications except the last one, where it is still significant at the 5% level. A reduction in depreciation expenses increases the probability to create positive earnings surprises. Taken together, results from Table 5, Panel A and B provide evidence that earnings surprises are influenced by capital budgeting decisions through the depreciation channel.

[15] Fixed effects logit regressions do not estimate the fixed effects parameters that are required to compute the marginal effect on the probability to meet or beat analysts' consensus EPS forecasts. Therefore, I need to assume that the fixed effects are equal to 0 and compute the marginal effects at the mean value of control variables. The assumption that the fixed effects are zero on average is arbitrary because fixed effects logit regression estimation does not impose any restriction on the mean value of the fixed effects.

D. Is Endogeneity Driving the Results?

The empirical tests of Hypothesis 2 are potentially subject to endogeneity problems. Simultaneity bias may be a cause for concern as EPS and *Capital expenditures* are determined over the same period. Therefore, *Non-negative EPS surprise* and *Capital expenditures* might be jointly determined by an unobserved factor. I explore two causality links consistent with this potential issue, and find that the indirect and direct empirical evidence does not support endogeneity driving the results.

First, investment decisions could be jointly determined by a shock that also affects analysts' prediction abilities in the same fiscal year. Analysts might be too pessimistic about firms experiencing a negative shock that simultaneously negatively impacts investment decisions. But existing studies do not support this interpretation. Easterwood and Nutt (1999) find that analysts underreact to bad news and overreact to good news contained in the prior year's performance. Elliott, Philbrick, and Weidman (1995) find that analysts underreact to bad and good news within the forecast year. These pieces of empirical evidence are consistent with bad news being associated with less positive earnings surprises. They are therefore inconsistent with reduced investment, due to bad news, being associated with positive earnings surprises.

Alternatively, investment decisions could be jointly determined by a negative shock that positively affects the firms' earnings in the same fiscal year. In this view, managers decide to reduce costs at the same time as they reduce capital expenditures, e.g. for restructuring purposes. Analysts would increase earnings forecasts insufficiently, and the probability of positive earnings surprises would increase as a result, as these restructuring charges would be good news to the firm. This line of argument too is inconsistent with the existing empirical evidence. Chaney, Hogan, and Jeter (1999) find that analysts perceive restructuring news as bad news: they revise their EPS forecasts downwards. Consistent with bad news resulting in less earnings surprises, Chaney, Hogan, and Jeter (1999) also find that firms announcing restructuring charges are less likely to have

positive earnings surprises. As a result, one should not be too concerned about the simultaneity of earnings surprises and lower investment due to the same restructuring decisions.

Based on the above discussion, endogeneity problems should not be too much of a concern, all the more as I already control for bad news in some of the specifications. Nevertheless, I use two different strategies to further strengthen results about Hypothesis H2.

First, I test whether bad news firm-year observations drive the negative correlation between earnings surprises and investment. To test this hypothesis, I build a dummy variable – *Bad news,* equal to 1 if the firm-year observation corresponds to bad news, and equal to 0 otherwise – that I interact with capital expenditures. Bad news is a proxy for a negative shock affecting the firm in a a given fiscal year. I classify firm-year observations as bad news if the forecast revision during the fiscal year – the difference between the last EPS consensus forecast in the fiscal year minus the first EPS forecast in the fiscal year, scaled by lagged stock price – is in the lowest quartile for the fiscal year. Equation (4) introduces the new specification:

$$\begin{aligned}\Pr(Non-negative\ EPS\ \text{surprise}_{it}=1) = \Lambda(&\alpha_t+\eta_i+\gamma.Capital\ expenditures_{it}\\ &+\chi.Capital\ expenditures_{it}\times Badnews_{it}+\kappa.Badnews_{it}\\ &+\lambda.CONTROLS_{it}+\varphi.CONTROLS_{it-1}+\varepsilon_{it})\end{aligned} \quad (3)$$

Under this new specification, I expect γ to remain significantly negative.

[Insert table 6 about here]

Table 6 presents the results. The negative correlation between *Capital expenditures* and *Non-negative EPS surprise* is not driven by bad news firm-year observations, confirming that the endogeneity issues discussed above do not drive the results. All coefficients on *Capital expenditures* are negative and significant at the 1% level. The coefficient on *Bad News* is negative and significant at the 1% level in columns 1 and 2, and becomes positive but insignificant in the last two columns when the dummy variable *Downwards consensus revisions* is added to the list of

controls. The coefficient on the interaction term between *Capital expenditures* and *Bad News* is positive but not significant[16,17].

Second, to address concerns about the direction of causality, I use quarterly data from I/B/E/S and Compustat to control for the timing of the investment decision relative to its effects on earnings surprises. I then estimate the following model:

$$\Pr(\textit{Non-negative Q4 EPS surprise}_{it} = 1) = \Lambda(\alpha_t + \eta_i + \gamma.\,\mathrm{Q}(4-\mathrm{k})\textit{Capital expenditures}_{it} + \lambda.\textit{CONTROLS}_{it} + \varphi.\textit{CONTROLS}_{it-1} + \varepsilon_{it}) \quad (4)$$

in which *Non-negative Q4 EPS surprise*$_{it}$ is a dummy variable equal to one if the firm meets or beats the analysts' EPS consensus forecast for the last quarter of fiscal year *t*, and is equal to zero otherwise, and *Q(4 - k) Capital Expenditures* is capital expenditures in quarter *4-k*, with $1 \leq k \leq 3$ (I use capital expenditures from one the first three quarters). I report the results of this specification and some other variants in Table 7.

[Insert table 7 about here]

Table 7, column 1 reports the results of a regression in which I regress *Non-negative EPS surprise*, based on the consensus for the current fiscal year, on *Lagged Capital Expenditures*, capital expenditures from the previous fiscal year. Table 7, columns 2 to 5 report the results of a regression in which I regress *Non-negative Q4 EPS surprise* on *Capital expenditures* in the first semester in column 2, and in the first, second and third quarters of the same fiscal year in column 3 to 5 respectively[18].

The results remain robust to the above new specifications. Decreased (increased) investment in early periods increases (decreases) the probability that a firm will create positive earnings surprises

[16] Note that one cannot infer from the interaction term's z-statistic that the interaction effect is significantly different from zero, as argued in Ai and Norton (2003) and Powers (2005). I follow these authors and Norton, Wang and Ai (2004) to check that the interaction effect is indeed not significantly different from zero, using the total marginal effects.
[17] I also test model (4) in which *Downwards consensus change* is used instead of *Bad news* and find similar results. In addition, discarding all *Bad news* firm-year observations from the sample and running fixed effects logit regressions based on model (2) yields similar results: *Capital expenditures* is still significantly negatively correlated with *Non-negative EPS surprise* at the 1% level with even more negative coefficients and higher z statistics. These results are not tabulated in the interest of space but are available from the author upon request.
[18] Note that these variables are including total investment for the period considered only. I do not rescale these investment variables on a yearly rate basis. As a result, firms invest approximately half of what is invested in a year in the first semester, while in a quarter, firms invest about one fourth of what is invested in a year.

in the future. This result also confirms that analysts do not anticipate the effects of investment on EPS. Quarterly capital expenditures data are publicly available data, so analysts, if they behave rationally, should be able to adjust their forecasts to a change in investment level. Even more surprising, capital expenditures in the previous fiscal year can positively predict earnings surprises in the next fiscal year.

E. Is the Reduction in Investment Detrimental to Shareholders?

An interesting question is whether the reduction in investment induced by fixation on consensus EPS forecasts corresponds to a reduction of overinvestment, or the passing up of valuable investment opportunities. In the former case, the reduction in investment would be beneficial to shareholders, while in the latter case it would be detrimental to shareholders.

It is not clear whether the average firm in the sample is (i) investing the right amount of money, is (ii) underinvesting or (iii) overinvesting. Observing a reduction in investment can be interpreted as underinvestment under hypothesis (i), or a worsening of the underinvestment problem under hypothesis (ii). In these two cases, analysts adversely affect investment through increased underinvestment. Conversely, under hypothesis (iii), the observed reduction in investment to create earnings surprises can be interpreted as an improvement in the firms' capital budgeting policy through reduced overinvestment.

Recent empirical evidence provided by Bertrand and Mullainathan (2003) and Bøhren, Cooper, and Priestley (2007) suggests that overinvestment is not the norm among U.S. firms. Managers enjoy the "quiet life": they tend to underinvest rather than overinvest. Bøhren, Cooper, and Priestley (2007) find that firms where managers are more entrenched tend to invest less than firms in which good governance protect shareholders against managerial discretion. Based on these results, one would expect the reduction in investment found previously to lead to a negative effect.

To address this question in my sample, I investigate whether firms pass up valuable investment opportunities. To do so, I rank firms based on their investment opportunity set and explore whether firms with better investment opportunities drive the results.

[Insert table 8 about here]

Table 8, Panel A reports that firms with high *Tobin's Q*, firms in the highest tercile, respond even more to analyst pressure than other firms by reducing investment more. The interaction terms between variable *High Tobin's Q* and *Analyst pressure1*, and *High Tobin's Q* and *Analyst pressure2* are negative and significant at the 10% and 5% level respectively. On the other hand, the interaction terms between *High Tobin's Q* and *Forecast EPS change1* and *High Tobin's Q* and *Forecast EPS change2* are positive but not significant.

In addition, firms with good investment opportunities that decrease their investment increase their likelihood of beating the consensus more than firms with bad investment opportunities (Table 8 Panel B). Firms in the lowest Tobin's Q tercile, the firms that have the lowest investment opportunities, do not create earnings surprises when reducing investment. Although the coefficient on *Capital expenditures* is negative, it is not significant at conventional levels. On the other hand, firms with the largest investment opportunities, firms in the highest Tobin's Q tercile have a large negative coefficient on *Capital expenditures*. It is significant at the 1% level and more negative than the coefficient for firms in the second tercile. The significance level is also larger. This, again, suggests that the reduction in investment related to consensus beating is not beneficial to the firms in our sample.

These results are consistent with firms giving up or postponing profitable investment opportunities to create positive earnings surprises.

Taken together, these results are surprising. Managers destroy value if they cancel a positive NPV project to meet or beat short-term earnings targets. Likewise, postponing a positive NPV project negatively affects the firm's value because of the time value of money. In addition, investment opportunities may have been abandoned to competitors for some time.

It is legitimate to ask why managers use costly investment manipulations when they have a wide array of potentially less costly devices at their disposal to create positive earnings surprises. I address this question in the next section.

F. Why Do Managers Use Such Costly Earnings Manipulation Strategy?

In this section, I argue that managers use investment as a tool to manage earnings on a large scale, not necessarily as a last resort, when other alternative earnings management devices have been exhausted. I provide empirical evidence consistent with this argument, and suggest that this behavior may be due to the large information asymmetry benefits the investment manipulation provides relative to standard earnings manipulation devices. I also argue, based on empirical evidence, that managers maintain investment artificially low in order to create earnings reserves and to be able to create positive earnings surprises at the end of the fiscal year. In addition, I find that firms resort to investment manipulation equally often over the entire time-period of my sample, suggesting that this form of earnings management is not the consequence of an increased scrutiny on financial accounts by the regulation authorities or the stock market.

Matsumoto (2002) finds that managers use both earnings management and analysts' expectations management to create positive earnings surprises. Earnings management is carried out through accruals management. Managers increase the non-cash component of earnings to increase EPS. Such manipulation is costly because managers have to decrease the non-cash components of earnings in the future to make up for past increases, and because such action is potentially visible to the careful investor. The former argument suggests that firms with high past increases in accruals have less flexibility in managing earnings with discretionary accruals than firms with low past increases in accruals. Therefore, there may be a "pecking order" of earnings management instruments. Firms may have to resort to investment manipulation to create earnings surprises in case they have exhausted less costly alternatives. I test this hypothesis by sorting firms based on the level of their past *Total Accruals* as a percentage of *Total Assets*, and rank them by quartile. I then construct a dummy variable equal to 1 if the firm-year observation falls into the top quartile, and equal to 0 otherwise. I interact this variable with *Analyst pressure* in specification (1) and with *Capital expenditures* in specification (2).

[Insert Table 9 about here]

The results of these regressions are presented in Table 9 Panel A and B. They suggest that firms do not resort more to investment reduction when they have less discretion in using accruals as an earnings management instrument[19]. However, this result may also be due to the inability of my selected variable to proxy for the inability to use other, supposedly less costly, earnings or expectations management instruments.

In a traditional cost-benefits trade-off, firms are expected to resort to the least costly instrument to create positive earnings surprises. A priori, one would expect managers to use other earnings management devices, unless investment reduction offers other advantages. The additional advantages of investment manipulation lie in the large information asymmetries concerning capital budgeting decisions. Auditors and analysts cannot observe the set of investment opportunities that have been given up or postponed by managers to create positive earnings surprises, whereas they can readily observe earnings or expectations management ex-post, when carried out by managers. These information asymmetries could be very valuable to managers if they want to avoid attracting attention on such earnings management practices, or if they want to reduce the risk of a lawsuit. Furthermore, as argued in section III.D., even analysts do not grasp the effect a reduction in investment has on earnings surprises.

Therefore, by keeping investment low early on in an accounting period, managers create earnings reserves (Penman and Zhang (2002)) that are useful in creating positive earnings surprises towards the end of the accounting period; they also avoid arising suspicion regarding their current investment policy relative to the recent past. This hypothesized strategy is consistent with the pattern exhibited in Figure 1 over several fiscal years prior to the earnings surprise, and in Table 7 and Figure 2 during the fiscal year in which the positive earnings surprise is created. Indeed, Figure 1 suggests that firms keep investment at low levels during several fiscal years before the positive earnings surprise. Table 7 suggests that earnings surprises are created by low investment in the first quarters of the fiscal year. In addition, Figure 2 shows that firms with non-negative EPS surprise at

[19] The results are robust to the use of various variables proxying for the past use "traditional" accounting instruments earnings management such as the discretionary accruals management as in the modified Jones (1991) model.

the end of the fiscal year invest less in the first three quarters of the year than firms with negative EPS surprise, whereas they invest more in the last quarter, i.e. when investment will not have a large impact on the fiscal year EPS. An investment in fixed assets leads to depreciation costs in proportion to the number of months separating the purchase date from the fiscal year end date. Therefore, a one dollar investment in fixed assets in the last quarter of the fiscal year generates less depreciation expenses than a one dollar investment in one of the first three quarters. This pattern of quarterly investment is consistent with managers using investment defensively, in order to be able to create positive earnings surprises at the end of the fiscal year.

Graham, Harvey, and Rajgopal (2005) report that managers declare that they resort less to earnings management than outright value-destroying decisions – in the form of reduced discretionary expenses and reduced investment – to attain the desired earnings benchmark. They attribute this finding to the stigma attached to earnings management in the context of the post-Enron and Worldcom accounting scandals, and managers' unwillingness to confess such accounting practices. I actually find that firms seem to generate earnings surprises through investment policy equally often in the various decades of my sample (i.e. in the 1980s, 1990s and early 2000s)[20]. Managers, however, use investment reductions in response to analyst pressure slightly more often in the 1980s than in the 1990-2005 period. These findings suggest that investment manipulation is not new to U.S. firms, and probably not the result of a recent increased scrutiny on accounting management. Earnings surprises may have become more and more important recently (see e.g. Degeorge, Patel, and Zeckhauser (2007)), yet the means to "artificially" create those earnings surprises do not seem to have changed over this long time-period.

[20] I do not tabulate the results in the interest of space. I run regressions of model (2) where I also interact dummy variables for firm-year observations being in the 1980s, 1990s and 2000s with *Capital expenditures*. The marginal interaction effect is not significant, following the methodology described in Powers (2005), Ai and Norton (2003) and Norton Wang and Ai (2004) for interpreting interaction terms in logit regressions.

IV. Robustness Checks and Additional Tests

A. Robustness Checks

I perform several robustness checks relative to the previous choices of variables and specifications.

[Insert table 10 about here]

First, I construct an alternative measure of analysts consensus forecast using the last forecast reported by a sell-side analyst in the I/B/E/S Individual Detail files[21] before the EPS reporting date. This measure has been used in the earnings surprise literature as an alternative to the last median EPS forecast in the I/B/E/S Individual Summary files on the grounds that it reflects more-up-to-date information by analysts issuing forecasts in the vicinity of the reporting date. The use of such variable makes sense in those analyses, because researchers are primarily interested in earnings management that is decided right before the reporting date, through e.g. accruals management. In our case, however, using the baseline consensus forecasts makes more sense as the investment decisions by managers should be influenced less by the desire to meet or beat the very last analyst EPS forecast, that is unknown yet. Indeed the investment decisions have been made already, and for the most part have been reported in previous quarterly reports. Managers have no way to influence the meeting or the beating of such late forecast through a reduction in investment. However, I use this forecast variable to further strengthen the results that were found in previous regressions, and to further argue that analysts do not seem to take into account the effect of investment reduction on earnings surprises. The results of model (2) with this new variable as the dependent variable are presented in Table 10. The coefficient on *Capital expenditures* is always negative in all specifications of the model with a significance level of 1% and 5% in column 3 and 4 respectively. The significance is slightly reduced relative to the main specification, especially in specifications where fewer controls are included (column 1 and 2). Nevertheless, this reduced significance was expected. Analysts issuing forecasts before the reporting date should incorporate more information

[21] I again use the file with unadjusted data for stock splits, and adjust them using the procedure recommended by WRDS in Robinson and Glushkov (2006).

about the effects corporate investment has on earnings. Still, they do not incorporate enough information to cancel out the negative impact of investment on earnings surprises.

Second, I provide evidence that corporate investment is not correlated with surprises in sales, thus further strengthening the argument that the negative correlation between earnings surprises and investment is not spurious. I construct the variable *Non-negative sales surprise* as a dummy variable equal to one if sales reported in the fiscal year are larger than or equal to the analysts' sales consensus forecast and equal to zero otherwise. I take the last median consensus forecast from the I/B/E/S Summary files. Because sales forecast are scarcer in the I/B/E/S database[22], the number of observations available for our analysis drops from 65,221 for the period 1981 to 2005 to 17,895 firm-year observations for the period 1993 to 2005. In addition, because of the specific procedures used in the fixed effects logit estimation and the various variable requirements, the number of firm year-observations drops to numbers ranging from 10,562 to 11,793 firm-year observations, depending on the specification. The number of observations should be large enough to obtain good estimation from the logit firm-fixed effects regressions.

[Insert table 11 about here]

As expected, results reported in Table 11 show that there is no significant negative correlation between sales surprises and investment. The coefficient on *Capital expenditures* is negative in all specifications, but is not significant at any usual level. The z statistics are low, ranging from 0.51 to 1.08. Sales surprises are not negatively correlated with investment. This result is consistent with our previous finding that investment creates surprises in costs, but not in revenues.

Furthermore, although I do not tabulate the results here in the interest of space, the previous results remain robust to the inclusion of several additional controls in specifications (1) and (2).

As a robustness check, I include a control for expectations management as in Matsumoto (2002), a control for blockholders as in Matsumoto (2002) and a control for the turnover in institutional investor as in Gaspar, Massa, and Matos (2005). I do not find that firms with high

[22] Data on sales forecasts and sales realizations have been collected from year 1993 onwards in I/B/E/S.

institutional investor turnover are more prone to decreasing investment to create earnings surprise. All previous results remain robust to the introduction of these control variables, and statistical significance remains at identical levels. Furthermore, I also find that the results are not driven by firms with bad governance charters, based on measures proposed by Gompers, Ishii, and Metrick (2003) or Bebchuk, Cohen, and Ferrell (2004). This result adds to the argument that the observed reduction in investment does not solve an overinvestment problem.

In addition, I confirm that the negative correlation between *Analyst pressure* and *Capital Expenditures* in specification (1) is not driven by firm-year observations with large investments in past periods. Indeed, one could suspect that analysts forecast abnormally high EPS growth for firms that have invested heavily in previous years. The high forecast growth would result from the large expected profitability when the projects come to fruition. These firms would reduce investment in subsequent years because these large investment projects are in place. Therefore, the pattern in past investment would be the cause for the negative correlation between *Analyst pressure* and *Capital expenditures*, and no direct causality would link these two variables. I test this alternative explanation by running regressions of specification (1) when I take out all firm-year observations that fall into the top quintile of lagged capital expenditures. The results are presented in Table 12.

[Insert table 12 about here]

The results are robust to this new sample of firms, suggesting that the negative correlation between *Analyst pressure* and *Capital Expenditures* is not driven by firm-year observations with large past investments.

I now turn to the presentation of evidence that corporate investment influences the firm's cost structure as postulated in the development of my hypotheses, and analyze its economic significance.

B. Is Corporate Investment Important for the Firm's Costs and Depreciation?

To measure the economic influence a reduction in corporate investment has on net income through the depreciation channel, I measure the average impact of a year-over-year change in capital expenditures on the contemporaneous year-over-year change in depreciation. To do so, I run

panel regressions with firm and year fixed effects in which the dependent variable, the first difference in depreciation scaled by lagged total assets, is regressed on the first difference in capital expenditures scaled by lagged total assets.

[Insert table 13 about here]

The first column in Panel A of Table 13 presents the results of this regression. Results indicate that a 1% increase in capital expenditures in year *t* results in a 0.066% increase in depreciation in the same year (all variables are expressed as a percentage of total assets). On the other hand, in the second column of the table, I find that a 1% increase in depreciation decreases net income by approximately 1% of total asset. Taken together, these results indicate that a reduction in the first difference in investment by one (within-firm) standard deviation (6.87%) would result in an estimated increase of 50% in mean net income (6.87%*0.066*(-1.07)/0.98%), or an increase of 11% in median net income (6.87%*0.066*(-1.07)/4.5%). So, it appears that the direct effects of corporate investment on net income through the depreciation channel are economically large.

The influence of corporate investment on earnings, however, goes beyond this direct channel. Empirical support for the above assumptions is mixed on annual data and more convincing on quarterly data. Panel B of Table 13 exhibits correlation coefficients between capital expenditures, Selling General and Administrative (SG&A), depreciation, rental, advertising and labor expenses on annual data for my sample of firms. Both contemporaneous and lagged capital expenditures are significantly correlated with depreciation, and rental expenses, but not with advertising expenses or labor expenses, and they are negatively correlated with SG&A.

I also use quarterly accounting data from the *Compustat Quarterly Industrial database*. This database does not provide a detail of SG&A expenses, but it allows me to analyze the impact of *Lagged quarterly capital expenditures* on *Quarterly SG&A expenses* beyond its impact on *Quarterly depreciation and amortization expenses.* Panel C of Table 13 presents results of the panel regression with firm and quarter-year fixed effects where quarterly SG&A expenses is regressed on quarterly depreciation expenses and lagged quarterly capital expenditures plus a control for the

common scaling factor, the inverse of total assets. This regression suggests that lagged quarterly capital expenditures are positively correlated with quarterly SG&A beyond their influence on depreciation expenses. However, these results should be interpreted with caution, as they could be driven by an unobserved factor that simultaneously influences investment and SG&A expenses. For instance, a managerial decision to "cut all costs", including investment, could be driving these results, e.g. for restructuring purposes. Note, however, that the depreciation channel is important enough in magnitude to explain alone the effect of investment on earnings surprises.

V. Conclusion

This paper presents evidence that analysts exert adverse short-term pressure on firms' investment policy through their earnings per share (EPS) forecasts. Firms reduce investment when analysts' consensus EPS forecasts are high at the start of the year, and firms invest less to meet or exceed analysts' consensus EPS forecasts. The reduction in investment related to earnings surprises and abnormal analyst pressure affects primarily firms with good investment opportunities. These findings suggest that analysts may play a role in the managers' myopia, as suggested in Stein (1989). It is difficult, however, to conclude whether the negative impact analysts have on corporate investment outweigh the benefits of analyst coverage on information asymmetry (Chen, Dasgupta, and Hilary (2006), Li and Zhao (2006), and Doukas, Kim, and Pantzalis (2006)). Analysts may relieve firms from financing constraints on investment in the long term. However, they also seem to encourage underinvestment in the short term, in order to meet analysts' consensus EPS forecasts. To address this question, it could be interesting to investigate whether firms with high (low) analyst pressure exhibit lower (higher) long-term abnormal stock returns. In addition, although in this paper I exclusively focus on earnings, analyst pressure may take different forms in different periods. Aghion and Stein (2007) suggest that the stock market may set managerial focus on various performance metrics over time, e.g. growth or profitability. These shifts in focus could induce corporate financial decision biases. These questions remain largely unexplored empirically.

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Construction of the *Changes in Total Accruals* variable

Accruals management is an important variable through which firms create earnings surprises (Brown (2001)). The accounting literature on earnings management has provided several methods to measure earnings management (Dechow et al. (1995)). Accruals represent the non-cash component of earnings. Earnings in year *t* are equal to the sum of cash flows and accruals in the same year:

$$Earnings_t = Cash\ flow_t + Accruals_t$$

If managers have discretion in deciding the level of accruals for a given year, then we want to measure the discretionary part of accruals. The simplest such proxy for discretionary accruals has been provided by De Angelo (1986) who uses *Changes in Total Accruals* as a proxy for the discretionary accounting adjustments. For expositional clarity I rely on the simplest accruals management proxy. Using the more sophisticated modified Jones (1991) model, following the procedure described in Dechow et al. (1995), provides similar results for all my tests. Dechow et al. (1995) find that this measure efficiently detects earnings management.

$$Changes\ in\ Total\ Accruals = Total\ accruals_t - Total\ accruals_{t-1} = (DA_t - DA_{t-1}) - (NA_t - NA_{t-1})$$

where *DA* is discretionary accruals and *NA* is normal accruals. If we assume that changes in normal accruals are equal to zero on average, then changes in Total Accruals should reflect changes in discretionary accruals. Following De Angelo (1986) and Dechow et al. (1995), I define Total Accruals as follows: changes in current assets (item 4) minus changes in cash (item 1), minus changes in current liabilities (item 5) plus current maturities of long term debt (item 44) plus changes in income taxes payable (item 71) and I compute the difference between total accruals in year t and total accruals in year t-1. There is one notable difference between my measure of total accruals and the measure of accruals by the above authors. Because of the specific hypothesis I test, I exclude depreciation expenses (item 14). Indeed, in my story, capital expenditures directly impact depreciation expenses, and depreciation expenses will impact earnings to create earnings surprises. Including depreciation expenses in the computation of Total Accruals could potentially reduce the estimated effect of capital expenditures because of collinearity between these two variables. This

modification is made purely on logical grounds. In practical terms, I find that the inclusion of depreciation in Total Accruals computations does not reduce the significance of my results on Hypothesis H2, both for the De Angelo (1986) model and for the modified Jones (1991) model presented in Dechow et al. (1995).

Table 1 - Construction of the Analyst Pressure Proxies

Analyst Pressure1 and *Analyst Pressure2* are the residuals of the following two panel regressions with firm fixed effects. The dependent variables are *Forecast EPS change1* and *Forecast EPS change2* respectively, the forecast change in EPS from last year's realized EPS, normalized by lagged stock price, (EPS forecast$_{\text{start of year t}}$ - actual EPS$_{t-1}$)/Stock price $_{t-1-90days}$ or the forecast change in EPS from last year's forecast EPS *(EPS_t $forecast_{start\ of\ year\ t}$ - EPS_{t-1} $forecast_{end\ of\ year\ t-1}$)/Stock price $_{t-1-90days}$*. Coefficient estimates appear in bold while t-statistics are displayed within brackets under each coefficient. Standard errors adjust for heteroskedasticity and within correlation clustered by firm. *Tobin's Q* is the beginning of the year market-to-book ratio computed as the market value of equity plus book value of assets minus the book value of equity minus balance sheet deferred taxes scaled by the value of book assets. *Past Profitability* is last year's return on assets, defined as operating income before depreciation divided by total assets. *Cash Flow (t-1)* is the sum of earnings before extraordinary items, depreciation and amortization scaled by start-of-year *Total Assets* (multiplied by 100) in the previous year. *Positive EPS (t-1)* is a dummy variable equal to 1 if last fiscal year's EPS is equal or superior to zero. *Kaplan and Zingales (1997) index* is a modified Kaplan and Zingales (1997) index of Financial Constraints, excluding Tobin's Q. *Log (Analysts)* is the logarithm of the number of analysts that made annual earnings forecasts any month over the 12 months previous fiscal-year period. *Forecast EPS change in industry*, is the average *Forecast EPS change* (1 or 2) in the same industry (defined at the 3 digit SIC code level) excluding the firm-year observation. *Log (Assets)* is the logarithm of the beginning-of-the-year *Total Assets*. *Expected positive turnaround* is a dummy variable equal to 1 if the forecast EPS for fiscal year t is positive and the actual EPS in year t-1 is negative. *Expected negative turnaround* is a dummy variable equal to 1 if the forecast EPS for fiscal year t is negative and the actual EPS in year t-1 is positive. *Non-negative EPS surprise (t-1)* is a dummy variable equal to 1 if the firm posted earnings per share (EPS) at least equal to the last analysts' outstanding consensus EPS forecast before EPS announcement in the last fiscal year and equal to 0 otherwise. Year fixed effects are also included.

	Dependent variable	
	Forecast EPS change1	Forecast EPS change2
Tobin's Q	**-0.002*****	**-0.002*****
	(-3.64)	(-4.51)
Past Profitability	**0.029*****	**0.005**
	(2.59)	(0.66)
Positive EPS (t-1)	**-0.068*****	**-0.037*****
	(-13.59)	(-9.49)
Cash Flow (t-1)	**-0.001*****	**-0.001*****
	(-8.04)	(-7.44)
Kaplan and Zingales (1997) index	**0.000*****	**0.000*****
	(12.58)	(13.50)
Log (Analysts)	**-0.005*****	**-0.005*****
	(-3.88)	(-4.70)
Forecast EPS change in industry	**0.106*****	**0.160*****
	(6.47)	(7.47)
Log (Assets)	**-0.009*****	**-0.010*****
	(-6.49)	(-8.27)
Expected positive turnaround	**0.039*****	**0.029*****
	(7.91)	(7.51)
Expected negative turnaround	**-0.064*****	**-0.068*****
	(-14.27)	(-16.33)
Non-negative EPS surprise (t-1)	**-0.010*****	**0.012*****
	(-11.71)	(14.71)
Year-fixed effects	Yes	Yes
N obs	37,805	37,806
Adj. R2	0.51	0.46

*, **, *** indicate a significance level of less than 10%, 5%, and 1% respectively

Table 2 – Definition of Main Variables

Forecast EPS change1	Expected increase in EPS at the start of the year, measured as: *(EPS_t $forecast_{start\ of\ year\ t}$ - actual EPS_{t-1})/Stock price $_{t-1-90days}$*
Forecast EPS change2	Expected increase in EPS at the start of the year, measured as: *(EPS_t $forecast_{start\ of\ year\ t}$ - EPS_{t-1} $forecast_{end\ of\ year\ t-1}$)/Stock price $_{t-1-90days}$*
Analyst pressure1	Proxy for the level of analyst pressure at the beginning of the fiscal year. The variable is constructed as the residual of a firm and year fixed effects panel regression where *Forecast EPS change1* is regressed against *Past profitability*, lagged *Above EPS consensus forecasts, Tobin's Q*, lagged *Cash flow, Kaplan and Zingales (1997) index,* lagged *Positive EPS*, lagged *log(Analysts)*, lagged *log(Total Assets)*, and other specific variables (see section 3 page 12 and 13 and table 1 for details)
Analyst pressure2	Same as *Analyst pressure1* except that *Forecast EPS change1* is replaced by *Forecast EPS change2*
Capital expenditures	Capital expenditures (Compustat item 128) scaled by start-of-year total assets (item 6)
Depreciation	Depreciation and amortization (Compustat item 14) scaled by start-of-year total assets (item 6)
Total assets	Start-of-year total assets (item 6) (in million USD)
Tobin's Q	Market value of equity (item 199 multiplied by item 25) plus book value of assets minus book value of equity minus deferred taxes (item 6 - item 60 - item 74), scaled by book value of total assets (item 6). Variable is lagged one year
Past profitability	Ratio of operating income before depreciation and amortization (item 13) to start-of-year total assets. Variable is lagged one year
Sales	Sales (item 12) scaled by start-of-year total assets
Cash flow	Net income before extraordinary items (item 18) + depreciation and amortization expenses (item 14) scaled by start-of-year total assets
Kaplan and Zingales (1997) index	Start-of-year modified Kaplan-Zingales (1997) index of equity dependence (excluding *Tobin's Q*): *Kaplan and Zingales index (1997) index* = -1.002**Cash Flow* -39.368**Dividends* -1.315**Cash* +3.139**Leverage* *Dividends* is Common stock dividends (item 21) + Preferred Stock dividends (item 19) scaled by start-of-year total assets. *Cash* is item 1 scaled by start-of-year assets *Leverage* is long-term debt (item 9) plus debt in current liabilities (item 34) divided by total debt (item 9 + item 34) plus book value of common equity (item 216)
Firm age	Number of years the company has been present in the Compustat Price Dividend and Earnings database
Positive EPS	Dummy variable equal to 1 if the current fiscal year EPS (earnings per share) is equal or superior to zero
Analysts	Maximum number of analysts that posted EPS forecasts any month during the fiscal year for the fiscal year-end. Variable is lagged one year
Non-negative EPS surprise	Dummy variable equal to 1 when actual EPS is greater or equal to the last analysts' consensus forecast published before EPS reporting date
Percentage non-negative EPS surprises in industry	Percentage of firms in the same industry (at 3 digit SIC code level) that posted actual EPS equal or strictly above last EPS analysts consensus forecasts (excluding the firm year observation)
Standard deviation of forecasts	Dispersion of analysts' forecasts measured as the median of monthly EPS consensus forecasts standard deviation over the fiscal year forecasting period
Upwards forecast revisions	Dummy variable equal to 1 if the latest EPS consensus forecast before EPS announcement is strictly larger than the first EPS consensus forecast
Downwards forecast revisions	Dummy variable equal to 1 if the latest EPS consensus forecast before EPS announcement is strictly smaller than the first EPS consensus forecast
Positive EPS	Dummy variable equal to 1 if the current fiscal year EPS is equal or superior to zero
Changes in total accruals	Changes in total accruals from year t-1 to year t. Total accruals are defined as changes in current assets (item 4) minus changes in cash (item 1) minus changes in current liabilities (item 5) plus changes in current maturities of long term debt (item 44) plus changes in income taxes payable (item 71), all of these variables being scaled by beginning of the year total assets
Baker Stein and Wurgler's (2003) undervaluation	Compounded cumulative excess return (stock market return for the firm minus the value weighted stock market return) computed from *CRSP* over fiscal year t+1 to year t+3, as in Baker, Stein and Wurgler (2003)
Bad News	Dummy variable equal to 1 if the consensus analysts forecast revision (the difference between the last and the first median analyst consensus forecast for the fiscal year) scaled by lagged stock price is in the lowest quartile

Table 3 – Summary Statistics

Data are collected from the merged CRSP/Compustat Industrial database and I/B/E/S for the years 1981 to 2005, and exclude firms not covered by analysts, financial services firms (SIC code 6000-6999), regulated utilities (SIC code 4900), and firms with book value of equity smaller than $10 million. All variables are described in Table 2.

	Overall Sample			
	N	Mean	Median	Std. Dev.
Capital expenditures	64,362	8.62	5.67	9.51
Total assets	65,221	1,415	181	4,963
Tobin's Q	62,597	2.09	1.48	1.91
Past Profitability	54,931	12.78	15.00	20.64
Kaplan and Zingales (1997) index	54,673	20.97	20.17	131.26
Cash flow	64,998	5.41	9.46	21.25
Firm age	65,221	14.53	11	10.60
Analysts	62,750	7.59	5	7.50
Non-negative EPS surprise	63,791	0.57	1	0.50
Percentage non-negative EPS surprises in industry	63,122	0.57	0.58	0.18
Forecast EPS change1	41,181	0.04	0.01	0.10
Forecast EPS change2	41,201	0.03	0.01	0.07
Analyst Pressure1	37,805	0	0	0.07
Analyst Pressure2	37,806	0	0	0.05
Upwards forecast revisions	62,750	0.44	0	0.50
Changes in total accruals	54,865	-0.86	-0.34	14.18
Baker, Stein and Wurgler (2003)'s undervaluation	38,823	0.13	-0.17	1.26

Table 4 - Corporate Investment and Measures of Analyst Pressure

This table presents the results of panel regressions with firm fixed effects. The dependent variable is *Capital Expenditures*, a percentage of beginning of year *Total Assets* (multiplied by 100). Coefficient estimates appear in bold while t-statistics are displayed within brackets under each coefficient. Standard errors adjust for heteroskedasticity and within correlation clustered by firm. Year fixed effects are included in all regressions. All variables are defined in Table 2.

	Capital Expenditures											
	1	2	3	4	5	6	7	8	9	10	11	12
Forecast EPS change1	**-4.997*** **	**-2.900*** **	**-3.884*** **									
	(-11.95)	(-7.02)	(-6.24)									
Forecast EPS change2				**-5.413*** **	**-3.063*** **	**-4.401*** **						
				(-10.27)	(-5.87)	(-5.60)						
Analyst pressure1							**-2.447*** **	**-1.466*** **	**-1.776*** **			
							(-5.44)	(-3.31)	(-2.62)			
Analyst pressure2										**-3.176*** **	**-2.084*** **	**-3.214*** **
										(-5.62)	(-3.76)	(-3.80)
Tobin's Q	**0.792*** **	**0.933*** **	**0.993*** **	**0.793*** **	**0.936*** **	**0.996*** **	**0.807*** **	**0.932*** **	**0.991*** **	**0.807*** **	**0.932*** **	**0.992*** **
	(17.53)	(18.21)	(13.81)	(17.51)	(18.25)	(13.81)	(17.66)	(17.88)	(13.33)	(17.67)	(17.89)	(13.36)
Cash Flow	**0.037*** **	**0.037*** **	**0.044*** **	**0.038*** **	**0.038*** **	**0.045*** **	**0.035*** **	**0.036*** **	**0.043*** **	**0.036*** **	**0.036*** **	**0.043*** **
	(7.68)	(7.86)	(5.51)	(7.78)	(7.92)	(5.60)	(7.15)	(7.36)	(5.29)	(7.19)	(7.39)	(5.32)
Log (Analysts)	**0.726*** **	**0.594*** **	**0.545*** **	**0.735*** **	**0.597*** **	**0.534*** **	**0.769*** **	**0.612*** **	**0.564*** **	**0.770*** **	**0.612*** **	**0.565*** **
	(7.05)	(5.71)	(3.65)	(7.15)	(5.75)	(3.58)	(7.24)	(5.75)	(3.69)	(7.25)	(5.75)	(3.70)
Past Profitability	**0.049*** **	**0.040*** **	**0.050*** **	**0.051*** **	**0.040*** **	**0.051*** **	**0.059*** **	**0.045*** **	**0.055*** **	**0.059*** **	**0.045*** **	**0.055*** **
	(10.52)	(8.64)	(8.02)	(10.87)	(8.82)	(8.19)	(12.83)	(10.04)	(8.90)	(12.82)	(10.03)	(8.92)
Log (Assets)	**-2.596*** **	**-2.454*** **	**-2.817*** **	**-2.608*** **	**-2.457*** **	**-2.823*** **	**-2.557*** **	**-2.425*** **	**-2.768*** **	**-2.557*** **	**-2.423*** **	**-2.764*** **
	(-19.06)	(-16.15)	(-13.74)	(-19.12)	(-16.16)	(-13.73)	(-18.42)	(-15.74)	(-13.35)	(-18.41)	(-15.73)	(-13.33)
Kaplan and Zingales (1997) index		**-0.014*** **	**-0.016*** **		**-0.015*** **	**-0.016*** **		**-0.015*** **	**-0.017*** **		**-0.015*** **	**-0.017*** **
		(-15.38)	(-13.12)		(-15.75)	(-13.35)		(-15.98)	(-13.36)		(-16.01)	(-13.39)
Kaplan and Zingales (1997) index * Tobin's Q		**0.003*** **	**0.003*** **		**0.003*** **	**0.003*** **		**0.003*** **	**0.003*** **		**0.003*** **	**0.003*** **
		(10.71)	(9.99)		(10.88)	(10.12)		(10.38)	(9.58)		(10.39)	(9.57)
Log (Firm age)		**-1.432*** **	**-1.215*** **		**-1.444*** **	**-1.215*** **		**-1.457*** **	**-1.289*** **		**-1.453*** **	**-1.277*** **
		(-4.26)	(-2.62)		(-4.29)	(-2.62)		(-4.26)	(-2.71)		(-4.25)	(-2.68)
Tangibles		**-1.616*** **	**-1.148***		**-1.625*** **	**-1.150***		**-1.678*** **	**-1.039**		**-1.663*** **	**-1.012**
		(-3.06)	(-1.66)		(-3.09)	(-1.67)		(-3.13)	(-1.49)		(-3.11)	(-1.45)
Baker, Stein & Wurgler (2003)'s undervaluation			**-0.315*** **			**-0.316*** **			**-0.315*** **			**-0.317*** **
			(-7.14)			(-7.14)			(-7.03)			(-7.06)
Year-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N obs	38,624	38,309	23,268	38,643	38,328	23,273	37,302	37,165	22,578	37,303	37,166	22,578
Adj. R2	0.65	0.66	0.68	0.65	0.66	0.68	0.65	0.66	0.68	0.65	0.66	0.68

*, **, *** indicate a significance level of less than 10%, 5%, and 1% respectively

Table 5 - Earnings Surprises and Corporate Investment

This table presents the results of panel logit regressions with firm fixed effects. The dependent variable is *Non-negative EPS surprise*, a dummy variable equal to 1 when the firm posts earnings per share (EPS) superior to the analysts' last outstanding consensus EPS forecast before the fiscal year EPS announcement and equal to 0 otherwise. Coefficient estimates appear in bold while z-statistics are displayed within brackets under each coefficient. Standard errors adjust for heteroskedasticity and within correlation clustered by firm. Marginal Effects are presented for model 4: they are computed at the mean values of variables, assuming fixed effects are equal to zero (the logit with fixed effects estimation does not explicitely estimates fixed effects). Year fixed effects are included in all regressions. All variables are defined in Table 2.

Panel A – Non-negative EPS Surprises and Capital Expenditures

	Dependent Variable: Non-negative EPS surprise				Marginal Effects	Dependent Variable: Non-negative EPS surprise
	1	2	3	4	model 4	5
Capital expenditures	**-0.575*** **	**-0.617*** **	**-0.740*** **	**-0.775*** **	**-0.178**	**-0.894*** **
	(-2.73)	(-2.92)	(-3.19)	(-3.33)		(-3.33)
Sales	**0.262*** **	**0.260*** **	**0.189*** **	**0.202*** **	**0.046**	**0.095** **
	(6.88)	(6.81)	(4.49)	(4.71)		(1.91)
Cash Flow	**3.699*** **	**3.644*** **	**2.881*** **	**2.893*** **	**0.666**	**1.746*** **
	(19.37)	(19.20)	(14.16)	(14.10)		(8.82)
Log (Analysts)	**0.057** **	**0.057** **	**-0.043**	**-0.040**	**-0.009**	**0.025**
	(2.08)	(2.08)	(-1.31)	(-1.21)		(0.62)
Log (Assets)	**-0.040**	**-0.043**	**-0.067***	**-0.082** **	**-0.015**	**-0.096** **
	(-1.16)	(-1.26)	(-1.76)	(-2.08)		(-1.98)
Past Profitability	**-0.727*** **	**-0.706*** **	**-0.848*** **	**-0.895*** **	**-0.206**	**-0.948*** **
	(-6.14)	(-5.96)	(-6.58)	(-6.85)		(6.48)
Changes in total accruals	**0.305*** **	**0.315*** **	**0.183***	**0.186** **	**0.043**	**0.052**
	(3.66)	(3.76)	(1.96)	(1.99)		(0.47)
Percentage Non-negative EPS surprise in industry		**0.342*** **	**0.337*** **	**0.335*** **	**0.077**	**0.300*** **
		(5.12)	(4.60)	(4.56)		(3.10)
Standard deviation of forecasts			**-0.068** **	**-0.065** **	**-0.017**	**0.003**
			(-2.05)	(-2.00)		(0.09)
Positive EPS			**0.559*** **	**0.553*** **	**0.130**	**0.958*** **
			(12.00)	(11.80)		(16.16)
Upwards Consensus Change			**0.173*** **	**0.173*** **	**0.040**	**0.442*** **
			(6.18)	(6.18)		(12.66)
Log(Age)				**-0.014**	**-0.003**	**-0.152**
				(-0.16)		(-1.43)
Tangibles				**-0.309*** **	**-0.071**	**-0.250***
				(-2.78)		(-1.80)
Analyst pressure1						**-0.608** **
						(-2.48)
Year-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
N obs	43,539	43,030	36,405	36,356		25,425
Pseudo R2	0.05	0.05	0.06	0.06		0.07

*, **, *** indicate a significance level of less than 10%, 5%, and 1% respectively

Table 5 (continued)

Panel B – Non-negative EPS Surprises and Depreciation Expenses

	Dependent Variable: Non-negative EPS surprise			
	1	2	3	4
Depreciation	**-3.480*** **	**-3.392*** **	**-2.693*** **	**-2.236** **
	(-4.71)	(-4.60)	(-3.26)	(-2.52)
Sales	**0.287*** **	**0.282*** **	**0.196*** **	**0.198*** **
	(7.46)	(7.33)	(4.57)	(4.57)
Cash Flow	**3.651*** **	**3.597*** **	**2.843*** **	**2.852*** **
	(19.29)	(19.14)	(14.18)	(14.20)
Log (Analysts)	**0.056** **	**0.056** **	**-0.044**	**-0.044**
	(2.10)	(2.08)	(-1.38)	(-1.36)
Log (Assets)	**-0.046**	**-0.048**	**-0.067***	**-0.072***
	(-1.35)	(-1.41)	(-1.79)	(-1.85)
Past Profitability	**-0.794*** **	**-0.776*** **	**-0.910*** **	**-0.940*** **
	(-6.67)	(-6.52)	(-7.06)	(-7.20)
Changes in total accruals	**0.320*** **	**0.330*** **	**0.204** **	**0.203** **
	(3.86)	(3.95)	(2.19)	(2.17)
Percentage Non-negative EPS surprise in industry		**0.331*** **	**0.335*** **	**0.332*** **
		(5.01)	(4.61)	(4.57)
Standard deviation of forecasts			**-0.065** **	**-0.064** **
			(-2.02)	(-2.00)
Positive EPS			**0.545*** **	**0.543*** **
			(11.72)	(11.65)
Upwards Consensus Change			**0.176*** **	**0.176*** **
			(6.32)	(6.34)
Log(Age)				**-0.017**
				(-0.18)
Tangibles				**-0.169**
				(-1.44)
Year-fixed effects	Yes	Yes	Yes	Yes
N obs	44,053	43,543	36,862	36,809
Pseudo R2	0.05	0.05	0.06	0.06

*, **, *** indicate a significance level of less than 10%, 5%, and 1% respectively

Table 6 – Earnings Surprises, Corporate Investment and Bad News

This table presents the results of panel logit regressions with firm fixed effects where the dependent variable is *Non-negative EPS surprise*, a dummy variable equal to 1 when the firm posts earnings per share (EPS) equal to or superior to the analysts' last outstanding consensus EPS forecast before the fiscal year EPS announcement and equal to 0 otherwise. Coefficient estimates appear in bold while z-statistics are displayed within brackets under each coefficient. Standard errors adjust for heteroskedasticity and within correlation clustered by firm. Year fixed effects are included in all regressions. All variables are defined in Table 2.

	Dependent Variable: Non-negative EPS surprise			
	1	2	3	4
Capital expenditures	**-0.681*** **	**-0.728*** **	**-0.719*** **	**-0.778*** **
	(-2.74)	(-2.92)	(-2.71)	(-2.93)
Capital expenditures*Bad News	**0.282**	**0.307**	**0.279**	**0.269**
	(0.73)	(0.80)	(0.66)	(0.63)
Bad news	**-0.194*** **	**-0.193*** **	**0.031**	**0.034**
	(-4.40)	(-4.37)	(0.60)	(0.65)
Sales	**0.211*** **	**0.208*** **	**0.083***	**0.101** **
	(4.94)	(4.85)	(1.85)	(2.23)
Cash Flow	**3.136*** **	**3.090*** **	**1.891*** **	**1.893*** **
	(16.10)	(15.97)	(10.06)	(10.04)
Log (Analysts)	**0.069** **	**0.070** **	**0.007**	**0.015**
	(2.14)	(2.16)	(0.18)	(0.40)
Log (Assets)	**-0.059**	**-0.061**	**-0.088** **	**-0.092** **
	(-1.46)	(-1.51)	(-2.05)	(-2.03)
Past Profitability	**-0.761*** **	**-0.741*** **	**-0.816*** **	**-0.871*** **
	(-5.70)	(-5.55)	(-5.84)	(-6.18)
Changes in total accruals	**0.223** **	**0.233** **	**0.071**	**0.075**
	(2.33)	(2.42)	(0.67)	(0.71)
Percentage above EPS forecasts in industry		**0.377*** **	**0.315*** **	**0.313*** **
		(4.82)	(3.72)	(3.69)
Standard deviation of forecasts			**-0.020**	**-0.019**
			(-0.91)	(-0.86)
Positive EPS			**0.874*** **	**0.870*** **
			(16.35)	(16.22)
Downwards consensus revisions			**-0.413*** **	**-0.413*** **
			(-12.42)	(-12.38)
Log(Age)				**-0.140**
				(-1.40)
Tangibles				**-0.258** **
				(-1.99)
Year-fixed effects	Yes	Yes	Yes	Yes
N obs	33,088	32,701	28,851	28,812
Pseudo R2	0.05	0.05	0.06	0.06

*, **, *** indicate a significance level of less than 10%, 5%, and 1% respectively

Table 7 - Controlling for Reversed Causality

This table presents the results of panel logit regressions with firm fixed effects in which the dependent variables are *Non-negative EPS surprise* and *Non-negative EPS surprise in the 4th quarter*, a dummy variable equal to 1 when the firms posts earnings per share (EPS) superior to the analysts' last outstanding consensus EPS forecast before the fiscal year or fourth quarter EPS announcement and equal to 0 otherwise. Coefficient estimates appear in bold while z-statistics are displayed within brackets under each coefficient. Standard errors adjust for heteroskedasticity and within correlation clustered by firm. All accounting variables are scaled by lagged *Total Assets* (item 6 in Compustat). *Capital Expenditures* is a fraction of beginning of year *Total Assets*. It is computed for the previous year, first semester, the 1st, 2nd and 3rd quarters of the contemporaneous year from the Compustat quarterly Industrial database. *Percentage Non-negative EPS surprise in industry* is the percentage of firms in the same industry (defined at the 3 digit level SIC code) that met or beat analysts' consensus forecasts, as previously defined, in the same quarter, excluding the firm-year observation. All other financial variables are yearly data and defined in Table 2. Year fixed effects are included in all regressions.

	Dependent Variable: Non-negative EPS surprise	**Dependent Variable: Non-negative EPS surprise in 4th quarter**			
	1	2	3	4	5
Lagged Capital Expenditures	**-0.464****				
	(-2.40)				
Capital Expenditures 1st semester		**-2.126*****			
		(-4.10)			
Capital Expenditures 1st quarter			**-2.394****		
			(-2.38)		
Capital Expenditures 2nd quarter				**-4.004*****	
				(-4.55)	
Capital Expenditures 3rd quarter					**-2.859*****
					(-3.64)
Sales	**0.177*****	**0.169*****	**0.161*****	**0.172*****	**0.173*****
	(4.18)	(3.74)	(3.61)	(3.79)	(3.87)
Cash Flow	**2.829*****	**2.615*****	**2.554*****	**2.620*****	**2.634*****
	(14.18)	(13.37)	(13.15)	(13.36)	(13.35)
Log (Analysts)	**-0.044**	**-0.012**	**-0.020**	**-0.013**	**-0.012**
	(-1.36)	(-0.34)	(-0.58)	(-0.37)	(-0.35)
Standard deviation of forecasts	**-0.063****	**-0.042**	**-0.043**	**-0.042**	**-0.042**
	(-1.98)	(-1.48)	(-1.51)	(-1.50)	(-1.49)
PercentageNon-negative EPS surprise in industry	**0.326*****	**1.604*****	**1.605*****	**1.605*****	**1.604*****
	(4.44)	(21.02)	(21.09)	(21.03)	(20.97)
Past Profitability	**-0.851*****	**-1.101*****	**-1.121*****	**-1.109*****	**-1.137*****
	(-6.42)	(-7.82)	(-7.96)	(-7.90)	(-8.11)
Changes in total accruals	**0.196****	**0.176***	**0.163**	**0.172**	**0.164**
	(2.09)	(1.67)	(1.56)	(1.64)	(1.57)
Positive EPS	**0.547*****	**0.662*****	**0.666*****	**0.664*****	**0.663*****
	(11.71)	(13.22)	(13.37)	(13.25)	(13.21)
Upwards Consensus Change	**0.174*****	**0.316*****	**0.317*****	**0.317*****	**0.314*****
	(6.21)	(10.39)	(10.43)	(10.42)	(10.35)
Log(Age)	**-0.032**	**-0.033**	**-0.036**	**-0.031**	**-0.020**
	(-0.35)	(-0.34)	(-0.38)	(-0.32)	(-0.21)
Tangibles	**-0.291*****	**-0.205***	**-0.197**	**-0.207***	**-0.213***
	(-2.61)	(-1.65)	(-1.60)	(-1.67)	(-1.72)
Log (Assets)	**-0.066***	**-0.082***	**-0.071***	**-0.082***	**-0.075***
	(-1.69)	(-1.91)	(-1.66)	(-1.91)	(-1.76)
Year-fixed effects	Yes	Yes	Yes	Yes	Yes
N obs	36,329	31,870	31,983	31,870	31,904
Pseudo R2	0.06	0.08	0.08	0.08	0.08

*, **, *** indicate a significance level of less than 10%, 5%, and 1% respectively

Table 8 - Controlling for Firms' Investment Opportunities

Panel A presents the results of panel regressions with firm fixed effects. The dependent variable is *Capital Expenditures*, a fraction of beginning of year *Total Assets* multiplied by 100. Coefficient estimates appear in bold while t-statistics are displayed within brackets under each coefficient. Standard errors adjust for heteroskedasticity and within correlation clustered by firm. *Forecast EPS change1, Forecast EPS change2, Analyst Pressure1* and *Analyst Pressure2* are proxies for the level of pressure exerted by analyst at the start of the year on the firm's management to increase earnings per share (EPS). These variables are interacted with a dummy variable equal to 1 when the firm's *Tobin's Q* falls in the highest tercile (*High Tobin's Q*) at the beginning of the year. All other variables are defined in Table 2. Year fixed effects are included.

Panel A

	Dependent Variable: Capital Expenditures			
	1	2	3	4
Forecast EPS change1	**-4.938***** (-11.18)			
High Tobin's Q * Forecast EPS change1	**0.735** (0.69)			
Forecast EPS change2		**-5.347***** (-9.60)		
High Tobin's Q * Forecast EPS change2		**0.734** (0.59)		
Analyst pressure1			**-1.875***** (-3.81)	
High Tobin's Q * Analyst pressure1			**-2.256*** (-1.82)	
Analyst pressure2				**-2.283***** (-3.67)
High Tobin's Q * Analyst pressure2				**-3.631**** (-2.38)
High Tobin's Q	**1.356***** (10.26)	**1.365***** (10.19)	**1.347***** (10.28)	**1.344***** (10.29)
Tobin's Q	**0.634***** (13.88)	**0.634***** (13.84)	**0.650***** (13.97)	**0.650***** (14.00)
Cash Flow	**0.035***** (7.25)	**0.035***** (7.35)	**0.033***** (6.78)	**0.034***** (6.84)
Log (Analysts)	**0.654***** (6.37)	**0.663***** (6.47)	**0.703***** (6.64)	**0.704***** (6.66)
Log (Assets)	**-2.507***** (-18.59)	**-2.519***** (-18.65)	**-2.470***** (-17.98)	**-2.469***** (-17.98)
Past Profitability	**0.044***** (9.40)	**0.045***** (9.74)	**0.054***** (11.87)	**0.054***** (11.87)
Year-fixed effects	Yes	Yes	Yes	Yes
N obs	38,624	38,643	37,302	37,303
Adj. R2	0.66	0.66	0.66	0.66

*, **, *** indicate a significance level of less than 10%, 5%, and 1% respectively

Table 8 (continued)

Panel B presents the results of panel logit regressions run separately for three portfolios of firm-year observations that are based on the tercile in which a firm's start-of-the-year *Tobin's Q* falls for each year. The regression is run with firm fixed effects. The dependent variable is *Non-negative EPS surprise*, a dummy variable equal to 1 when the firms posts earnings per share (EPS) superior to the analysts' last outstanding consensus EPS forecast before the fiscal year EPS announcement and equal to 0 otherwise. Coefficient estimates appear in bold while z-statistics are displayed within brackets under each coefficient. Standard errors adjust for heteroskedasticity and within correlation clustered by firm. Year fixed effects are included in all regressions. All variables are defined in Table 2.

Panel B

	Dependent Variable: Non-negative EPS surprise		
	Low Tobin's Q		**High Tobin's Q**
	T1	T2	T3
Capital Expenditures	**-0.687**	**-1.302****	**-1.762*****
	(-1.27)	(-2.45)	(-3.92)
Sales	**-0.021**	**0.088**	**0.160***
	(-0.20)	(1.01)	(1.85)
Cash Flow	**2.813*****	**2.743*****	**1.328*****
	(4.27)	(5.21)	(5.56)
Log (Analysts)	**-0.084**	**0.036**	**-0.083**
	(-1.15)	(0.52)	(-1.11)
Percentage Non-negative EPS surprise in industry	**0.445*****	**0.213**	**0.341***
	(3.08)	(1.43)	(1.83)
Changes in total accruals	**0.272**	**0.124**	**0.055**
	(1.22)	(0.57)	(0.32)
Upwards Consensus change	**0.371*****	**0.454*****	**0.474*****
	(5.65)	(7.83)	(7.86)
Positive EPS	**1.535*****	**1.216*****	**1.043*****
	(14.00)	(9.06)	(7.90)
Past Profitability	**-1.933*****	**-0.761****	**-0.635*****
	(-3.99)	(-2.12)	(-3.26)
Log (Assets)	**0.016**	**-0.218*****	**-0.097**
	(0.16)	(-2.63)	(-1.20)
Year-fixed effects	Yes	Yes	Yes
N obs	7,617	8,654	8,303
Pseudo R2	0.10	0.07	0.06

*, **, *** indicate a significance level of less than 10%, 5%, and 1% respectively

Table 9 – Investment Manipulation: a Last Resort?

Panel A presents the results of panel regression with firm fixed effects. The dependent variable is *Capital Expenditures*, a fraction of beginning of year *Total Assets* multiplied by 100. Coefficient estimates appear in bold while t-statistics are displayed within brackets under each coefficient. Standard errors adjust for heteroskedasticity and within correlation clustered by firm. *Analyst Pressure1* is a proxy for the level of pressure exerted by analyst at the start of the year on the firm's management to increase earnings per share (EPS). This variable is interacted with a dummy variable, *High past accruals*, equal to 1 if the previous year *Total Accruals* scaled by lagged *Total Assets* is in the top quartile of lagged *Total Accruals* (*High Past Accruals*) at the beginning of the year, and equal to 0 otherwise. Year fixed effects are included. All other variables are defined in Table 2.

Panel A

	Dependent Variable: Capital Expenditures			
	1	2	3	4
Analyst pressure1	**-2.393*** **	**-1.622*** **	**-1.368*** **	**-1.833** **
	(-4.85)	(-3.35)	(-2.84)	(-2.56)
Analyst pressure1 * High past accruals	**-0.356**	**-0.607**	**-0.607**	**0.297**
	(-0.26)	(-0.46)	(-0.46)	(0.14)
High past accruals	**-0.102**	**-0.103**	**-0.182** **	**-0.123**
	(-1.20)	(-1.22)	(-2.12)	(-1.08)
Tobin's Q	**0.810*** **	**0.952*** **	**0.936*** **	**0.993*** **
	(17.67)	(18.04)	(17.88)	(13.32)
Cash Flow	**0.035*** **	**0.035*** **	**0.036*** **	**0.043*** **
	(7.13)	(7.15)	(7.34)	(5.28)
Log (Analysts)	**0.768*** **	**0.561*** **	**0.611*** **	**0.565*** **
	(7.24)	(5.31)	(5.74)	(3.70)
Past Profitability	**0.060*** **	**0.048*** **	**0.046*** **	**0.056*** **
	(12.56)	(10.32)	(10.03)	(8.80)
Log (Assets)	**-2.557*** **	**-2.364*** **	**-2.425*** **	**-2.769*** **
	(-18.40)	(-17.33)	(-15.73)	(-13.35)
Kaplan and Zingales (1997) index		**-0.015*** **	**-0.015*** **	**-0.017*** **
		(-15.98)	(-15.98)	(-13.36)
Kaplan and Zingales (1997) index * Tobin's Q		**0.003*** **	**0.003*** **	**0.003*** **
		(10.18)	(10.36)	(9.58)
Log (Firm age)			**-1.483*** **	**-1.307*** **
			(-4.31)	(-2.73)
Tangible Assets			**-1.717*** **	**-1.070**
			(-3.20)	(-1.53)
Baker, Stein & Wurgler (2003)'s undervaluation				**-0.315*** **
				(-7.02)
Year-fixed effects	Yes	Yes	Yes	Yes
N obs	37,302	37,302	37,165	22,578
Pseudo R2	0.65	0.66	0.66	0.68

*, **, *** indicate a significance level of less than 10%, 5%, and 1% respectively

Table 9 (continued)

Panel B

Panel B presents the results of panel logit regressions with firm fixed effects. The dependent variable is *Non-negative EPS surprise*, a dummy variable equal to 1 when the firm posts earnings per share (EPS) equal to or superior to the analysts' last outstanding consensus EPS forecast before the fiscal year EPS announcement, and equal to 0 otherwise. Coefficient estimates appear in bold while z-statistics are displayed within brackets under each coefficient. Standard errors adjust for heteroskedasticity and within correlation clustered by firm. *Capital Expenditures* is a fraction of beginning of year *Total Assets*. *High past accruals* is a dummy variable equal to 1 if the previous year *Total Accruals* scaled by lagged *Total Assets* is in the top quartile of lagged *Total Accruals*, and equal to 0 otherwise. *Capital Expenditures * High past accruals* is the interaction term between these two variables. Year fixed effects are included in all regressions. All other variables are defined in Table 2.

	Dependent Variable: Non-negative EPS surprise			
	1	2	3	4
Capital expenditures	**-0.492****	**-0.535****	**-0.850*****	**-0.877*****
	(-2.16)	(-2.35)	(-3.17)	(-3.25)
Capital expenditures * High past accruals	**-0.003**	**-0.003**	**-0.003**	**-0.003**
	(-1.01)	(-1.00)	(-0.82)	(-0.87)
High past accruals	**0.019**	**0.019**	**-0.042**	**-0.048**
	(0.46)	(0.45)	(-0.84)	(-0.97)
Sales	**0.263*****	**0.261*****	**0.083***	**0.096****
	(6.90)	(6.84)	(1.94)	(2.19)
Cash Flow	**3.701*****	**3.646*****	**1.689*****	**1.691*****
	(19.33)	(19.16)	(9.40)	(9.39)
Log (Analysts)	**0.057****	**0.057****	**-0.006**	**-0.002**
	(2.07)	(2.06)	(-0.16)	(-0.05)
Log (Assets)	**-0.041**	**-0.044**	**-0.075***	**-0.067**
	(-1.18)	(-1.28)	(-1.88)	(-1.59)
Past Profitability	**-0.007*****	**-0.007*****	**-0.008*****	**-0.009*****
	(-6.07)	(-5.89)	(-6.30)	(-6.51)
Changes in total accruals	**0.298*****	**0.308*****	**0.016**	**0.005**
	(3.05)	(3.13)	(0.14)	(0.05)
Percentage above EPS forecasts in industry		**0.341*****	**0.340*****	**0.337*****
		(5.11)	(4.28)	(4.24)
Standard deviation of forecasts			**0.010**	**0.010**
			(0.36)	(0.37)
Positive EPS			**0.997*****	**0.995*****
			(19.34)	(19.24)
Downwards consensus revisions			**-0.410*****	**-0.409*****
			(-13.49)	(-13.44)
Log(Age)				**-0.144**
				(-1.50)
Tangibles				**-0.093**
				(-0.77)
Year-fixed effects	Yes	Yes	Yes	Yes
N obs	43,539	43,030	31,542	31,497
Pseudo R2	0.05	0.05	0.07	0.07

*, **, *** indicate a significance level of less than 10%, 5%, and 1% respectively

Table 10 - Robustness Checks: Alternative Measure of Analyst Consensus Forecasts

This table presents the results of panel logit regressions with firm fixed effects. The dependent variable is *Actual EPS above last EPS forecast*, a dummy variable equal to 1 when the firms posts earnings per share (EPS) superior to the last analyst EPS forecast before the fiscal year EPS announcement, and equal to 0 otherwise. Coefficient estimates appear in bold while z-statistics are displayed within brackets under each coefficient. Standard errors adjust for heteroskedasticity and within correlation clustered by firm. Year fixed effects are included in all regressions. All other variables are defined in Table 2.

	Dependent Variable: Actual EPS above last EPS forecast			
	1	2	3	4
Capital Expenditures	**-0.519***	**-0.500***	**-0.772*****	**-0.721****
	(-1.93)	(-1.86)	(-2.65)	(-2.48)
Sales	**0.250*****	**0.240*****	**0.039**	**0.030**
	(5.02)	(4.83)	(0.74)	(0.56)
Cash Flow	**2.740*****	**2.711*****	**0.830*****	**0.855*****
	(13.73)	(13.61)	(4.17)	(4.28)
Log (Analysts)	**-0.002**	**-0.006**	**-0.055**	**-0.060**
	(-0.06)	(-0.15)	(-1.30)	(-1.41)
Log (Assets)	**-0.220*****	**-0.224*****	**-0.276*****	**-0.371*****
	(-4.85)	(-4.88)	(-5.54)	(-7.02)
Past Profitability	**-0.104**	**-0.091**	**-0.527*****	**-0.498*****
	(-0.69)	(-0.61)	(-3.28)	(-3.06)
Changes in total accruals	**0.390*****	**0.385*****	**0.180**	**0.169**
	(3.86)	(3.78)	(1.60)	(1.50)
Percentage above last EPS forecasts in industry		**0.246*****	**0.292*****	**0.279*****
		(2.71)	(2.95)	(2.81)
Standard deviation of forecasts			**0.006**	**0.010**
			(0.21)	(0.33)
Positive EPS			**1.608*****	**1.604*****
			(22.56)	(22.60)
Upwards Consensus Change			**0.380*****	**0.384*****
			(10.40)	(10.52)
Log(Age)				**0.705*****
				(5.82)
Tangibles				**-0.509*****
				(-3.39)
Year-fixed effects	Yes	Yes	Yes	Yes
N obs	32,297	31,731	27,524	27,476
Pseudo R2	0.04	0.04	0.08	0.08

*, **, *** indicate a significance level of less than 10%, 5%, and 1% respectively

Table 11 - Robustness Checks:
Sales Surprises and Corporate Investment

This table presents the results of panel logit regressions with firm fixed effects. The dependent variable is *Non-negative Sales surprise*, a dummy variable equal to 1 when the firms posts sales superior to the last analysts consensus sales forecast before the fiscal year sales announcement, and equal to 0 otherwise. Coefficient estimates appear in bold while z-statistics are displayed within brackets under each coefficient. Standard errors adjust for heteroskedasticity and within correlation clustered by firm. *Percentage Non-negative Sales surprise in industry* is the percentage of firms in the same industry (defined at the 3 digit level SIC code) that met or beat analysts' sales consensus forecasts, as previously defined, in the same fiscal year, excluding the firm-year observation. Year fixed effects are included in all regressions. All other variables are defined in Table 2.

	Dependent Variable: Non-negative Sales surprise			
	1	2	3	4
Capital Expenditures	**-0.003**	**-0.003**	**-0.003**	**-0.006**
	(-0.64)	(-0.51)	(-0.60)	(-1.08)
Sales	**0.606*** **	**0.595*** **	**0.480*** **	**0.508*** **
	(7.19)	(7.03)	(5.44)	(5.65)
Cash Flow	**0.690*** **	**0.634*** **	**0.358**	**0.392***
	(3.18)	(2.93)	(1.55)	(1.69)
Log (Analysts)	**-0.015**	**-0.025**	**-0.067**	**-0.066**
	(-0.28)	(-0.45)	(-1.11)	(-1.09)
Log (Assets)	**-0.120**	**-0.114**	**-0.147***	**-0.225*** **
	(-1.62)	(-1.51)	(-1.85)	(-2.59)
Past Profitability	**-0.966*** **	**-0.906*** **	**-0.921*** **	**-0.939*** **
	(-4.88)	(-4.56)	(-4.29)	(-4.36)
Changes in total accruals	**-0.106**	**-0.134**	**-0.236**	**-0.231**
	(-0.66)	(-0.82)	(-1.36)	(-1.33)
Percentage Non-negative sales surprise in industry		**0.863*** **	**0.835*** **	**0.829*** **
		(7.04)	(6.55)	(6.47)
Standard deviation of forecasts			**0.008**	**0.011**
			(0.17)	(0.23)
Positive EPS			**0.298*** **	**0.287*** **
			(3.66)	(3.53)
Upwards Consensus Change			**0.307*** **	**0.302*** **
			(6.30)	(6.19)
Log(Age)				**-0.356**
				(-1.42)
Tangibles				**-0.748*** **
				(-2.82)
Year-fixed effects	Yes	Yes	Yes	Yes
N obs	11,793	11,507	10,588	10,562
Pseudo R2	0.04	0.05	0.05	0.05

*, **, *** indicate a significance level of less than 10%, 5%, and 1% respectively

Table 12 - Robustness Checks:
Corporate Investment and Analyst Pressure, Excluding Large Past Investment Firm-Year Observations

This table presents the results of panel regressions with firm fixed effects. The dependent variable is *Capital Expenditures*, a fraction of beginning of year *Total Assets* (item 6) multiplied by 100. Coefficient estimates appear in bold while t-statistics are displayed within brackets under each coefficient. Standard errors adjust for heteroskedasticity and within correlation clustered by firm. The sample excludes firms that had lagged capital expenditures in the top quintile. Year fixed effects are included in all regressions. All other variables are defined in Table 2.

	Capital Expenditures											
	1	2	3	4	5	6	7	8	9	10	11	12
Forecast EPS change1	**-2.424*** **	**-1.874*** **	**-2.517*** **									
	(-10.88)	(-8.35)	(-8.97)									
Forecast EPS change2				**-5.694*** **	**-2.942*** **	**-4.408*** **						
				(-7.59)	(-3.98)	(-4.34)						
Analyst pressure1							**-1.554*** **	**-1.378*** **	**-1.508*** **			
							(-8.67)	(-7.78)	(-5.08)			
Analyst pressure2										**-1.677*** **	**-1.542*** **	**-1.901*** **
										(-7.67)	(-7.06)	(-5.15)
Tobin's Q	**0.278*** **	**0.319*** **	**0.357*** **	**0.831*** **	**1.024*** **	**1.009*** **	**0.295*** **	**0.330*** **	**0.362*** **	**0.295*** **	**0.330*** **	**0.363*** **
	(16.47)	(16.07)	(12.91)	(15.43)	(16.89)	(12.20)	(17.41)	(16.59)	(12.65)	(17.41)	(16.60)	(12.68)
Cash Flow	**0.018*** **	**0.017*** **	**0.024*** **	**0.041*** **	**0.042*** **	**0.046*** **	**0.017*** **	**0.017*** **	**0.022*** **	**0.017*** **	**0.017*** **	**0.022*** **
	(11.98)	(11.79)	(9.35)	(6.34)	(6.57)	(4.62)	(11.36)	(11.26)	(8.77)	(11.34)	(11.26)	(8.74)
Log (Analysts)	**0.298*** **	**0.234*** **	**0.216*** **	**0.747*** **	**0.570*** **	**0.466*** **	**0.297*** **	**0.231*** **	**0.221*** **	**0.298*** **	**0.231*** **	**0.221*** **
	(7.32)	(5.74)	(3.52)	(6.07)	(4.59)	(2.72)	(7.05)	(5.52)	(3.52)	(7.07)	(5.53)	(3.53)
Past Profitability	**0.022*** **	**0.019*** **	**0.020*** **	**0.057*** **	**0.045*** **	**0.059*** **	**0.026*** **	**0.021*** **	**0.024*** **	**0.026*** **	**0.021*** **	**0.024*** **
	(13.26)	(11.64)	(8.06)	(9.09)	(7.38)	(7.33)	(16.00)	(13.40)	(9.42)	(16.03)	(13.43)	(9.49)
Log (Assets)	**-0.661*** **	**-0.496*** **	**-0.639*** **	**-3.033*** **	**-2.794*** **	**-3.228*** **	**-0.620*** **	**-0.464*** **	**-0.625*** **	**-0.620*** **	**-0.463*** **	**-0.624*** **
	(-12.83)	(-8.71)	(-8.29)	(-19.19)	(-15.62)	(-13.72)	(-11.83)	(-8.05)	(-7.90)	(-11.83)	(-8.03)	(-7.88)
Kaplan and Zingales (1997) index		**-0.005*** **	**-0.006*** **		**-0.016*** **	**-0.016*** **		**-0.006*** **	**-0.007*** **		**-0.006*** **	**-0.007*** **
		(-14.07)	(-11.48)		(-14.25)	(-11.40)		(-15.22)	(-12.22)		(-15.31)	(-12.27)
Kaplan and Zingales (1997) index * Tobin's Q		**0.001*** **	**0.001*** **		**0.003*** **	**0.003*** **		**0.001*** **	**0.001*** **		**0.001*** **	**0.001*** **
		(8.38)	(6.95)		(11.79)	(9.14)		(8.26)	(7.02)		(8.32)	(7.04)
Log (Firm age)		**-0.287** **	**-0.112**		**-1.536*** **	**-1.014***		**-0.321** **	**-0.158**		**-0.323** **	**-0.154**
		(-2.20)	(-0.59)		(-3.85)	(-1.90)		(-2.41)	(-0.81)		(-2.43)	(-0.79)
Tangibles		**1.028*** **	**1.244*** **		**-1.745*** **	**-1.464***		**0.988*** **	**1.179*** **		**0.996*** **	**1.187*** **
		(5.20)	(4.60)		(-2.91)	(-1.95)		(4.89)	(4.24)		(4.92)	(4.27)
Baker, Stein & Wurgler (2003)'s undervaluation			**-0.110*** **			**-0.377*** **			**-0.112*** **			**-0.113*** **
			(-5.66)			(-7.20)			(-5.67)			(-5.71)
Year-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N obs	30,992	30,729	18,357	31,298	31,133	19,709	29,915	29,794	17,804	29,916	29,795	17,804
Adj. R2	0.64	0.65	0.64	0.65	0.65	0.67	0.64	0.64	0.64	0.64	0.64	0.64

*, **, *** indicate a significance level of less than 10%, 5%, and 1% respectively

Table 13 - Corporate Investment and Cost Structure

All data are collected from the Compustat Quarterly Industrial database for quarterly data and the Compustat Annual Industrial database for yearly data. Our sample of firms excludes firms not covered by analysts, financial services firms (SIC code 6000-6999), regulated utilities (SIC code 4900), and firms with book value of equity smaller than $10 million. Panel A presents panel regressions with firm fixed effects. Year fixed effects are also included in all regressions. All variables are scaled by lagged *Total Assets* (item 6 in Compustat). The dependent variables, *Depreciation expenses* is item 14, and *Net Income* is net income before extraordinary items (item 18). *Capital Expenditures* is item 128. *Sales* is net sales (item 12), *SG&A* is Selling, General and Administrative Expenses (item 189), *Cost of Goods Sold* is item 41, *Tangibles* is Gross Property, Plant Equipment (item 7) and *Inverse of Total Assets* is one divided by lagged total assets (item 6). Δ means that I use the first difference for the variable under consideration in the regression. Coefficient estimates appear in bold while t-statistics are displayed within brackets under each coefficient. Standard errors adjust for heteroskedasticity and within correlation clustered by firm. Panel B presents correlation coefficients between selected variables that are all scaled by lagged total assets (item 6). *Rental expenses* is item 47 in the Compustat Industrial Annual database, *Advertising expenses* is item 45, *Labor expenses* is item 42. Panel C presents panel regressions with quarter-year and firm fixed effects where the dependent variable, *Quarterly SG&A*, is quarterly selling, general and administrative expenses (item 1 in the Compustat Industrial Quarterly database) scaled by beginning of quarter total assets (item 44). Coefficient estimates appear in bold while t-statistics are displayed within brackets under each coefficient. Standard errors adjust for heteroskedasticity and within correlation clustered by firm. All variables are scaled by beginning of quarter *Total Assets* (item 44). *Quarterly Depreciation* is depreciation and amortization (item 5), *Lagged Quarterly Capital Expenditures* is lagged capital expenditures for the quarter only, recalculated from Compustat item 90 (cumulated capital expenditures from the beginning of the year to the end of the quarter), and *Inverse of Total Assets* is one divided by quarterly beginning of quarter total assets (item 44).

Panel A – Yearly Corporate Investment, Depreciation Expenses, and Net Income

	Dependent Variable:	
	Δ Depreciation	**Δ Net income**
Δ Capital expenditures	**0.066***** (25.42)	
Δ Sales		**0.332***** (25.94)
Δ Depreciation		**-1.070***** (-19.67)
Δ SG&A		**-0.296***** (-17.79)
Δ Cost of Goods Sold		**-0.302** (-19.96)
Tangibles	**1.235***** (12.40)	**5.474***** (14.39)
Inverse of Total Assets	**9.880***** (7.33)	**20.473***** (3.81)
Year-fixed effects	Yes	Yes
N obs	53,691	49,202
Adj. R2	0.21	0,38

*, **, *** indicate a significance level of less than 10%, 5%, and 1% respectively

Panel B – Correlation Between Yearly Investment, Depreciation, Rental, Advertising and Labor expenses.

	Capital expenditures	Lagged Capital expenditures	SG&A expenses	Depreciation expenses	Rental expenses	Advertising expenses	Labor expenses
Capital expenditures	1.00						
Lagged Capital expenditures	0.68***	1.00					
SG&A expenses	-0.02***	-0.10***	1.00				
Depreciation expenses	0.47***	0.43***	0.06***	1.00			
Rental expenses	0.17***	0.13***	0.38***	0.19***	1.00		
Advertising expenses	0.06***	0.00	0.45***	0.01**	0.15***	1.00	
Labor expenses	0.06***	0.02	0.21***	0.08***	0.21**	0.04*	
Number of total observations	64,362	54,373	58,933	64,838	57,678	22,844	5,753

*, **, *** indicate a significance level of less than 10%, 5%, and 1% respectively

Panel C – Quarterly Corporate Investment and SG&A expenses

	Dependent Variable: Quarterly SG&A
Quarterly depreciation	**1.33*** **
	(24.24)
Lagged quarterly capital expenditures	**0.07*** **
	(8.77)
Inverse of total assets	**0.30*** **
	(6.83)
Quarter-year fixed effects	Yes
N obs	165,746
Adj. R2	0.86

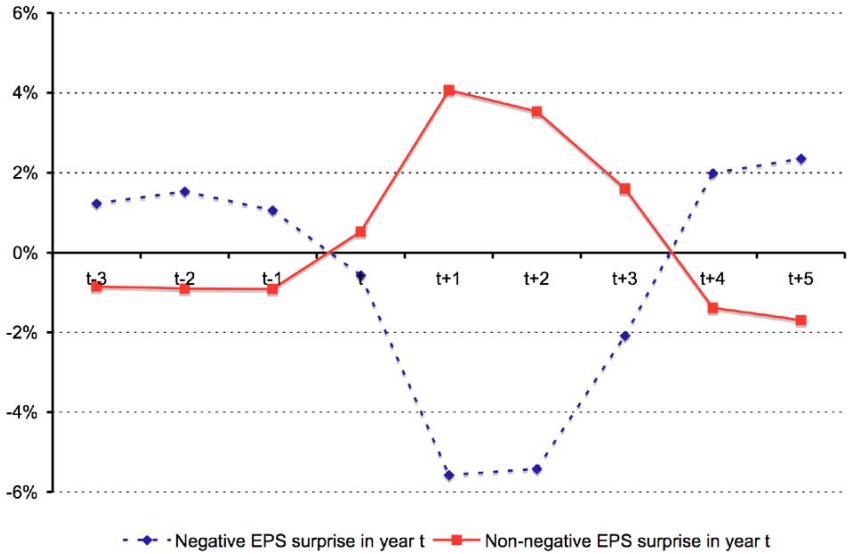
*, **, *** indicate a significance level of less than 10%, 5%, and 1% respectively

Figure 1

Meeting or Beating vs. Missing Analysts' EPS Consensus Forecasts: Investment Policy Evolution and Ex-Ante Investment Opportunities

Panel A displays the percentage difference in median *Capital Expenditures*, relative to the full sample, for the sub-sample of firms that met or beat analysts consensus forecast at time *t* and the sub-sample of firms that missed. Panel B displays the median firms' ex-ante investment opportunities (*Tobin's Q*) evolution over time for the same two sub-samples. *Tobin's Q* is the lagged market-to-book ratio computed as the market value of equity plus book value of assets minus the book value of equity minus balance sheet deferred taxes scaled by the value of book assets, all values being measured at the beginning of the fiscal year. *Capital Expenditures* is (Compustat) item 128 scaled by start-of-year *Total Assets*.

Panel A – Median Capital Expenditures



Panel B – Median Lagged Tobin's Q

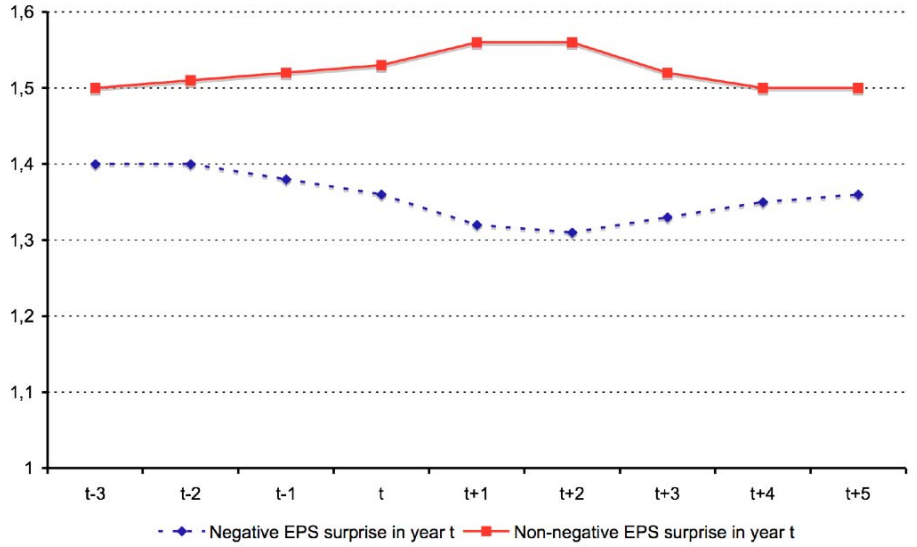


Figure 2

Meeting or Beating vs. Missing Analysts' EPS Consensus Forecasts: Quarterly Median Capital Expenditures

This graph displays the median firms' *Quarterly Capital Expenditures* for the sub-sample of firms that met or beat analysts' consensus forecast at time *t* and the sub-sample of firms that missed. *Quarterly Capital Expenditures* is computed from the cumulated capital expenditures in the Compustat Quarterly Industrial database (item 90) scaled by start-of-year *Total Assets* (item 6).