

On the Market Reaction to Revenue and Earnings Surprises

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Abstract: This study extends Ertimur et al. (2003) and Jegadeesh and Livnat (2006a) by providing a contextual framework for the information content of revenue and earnings surprises. I find that the influence of earnings surprises (revenue surprises) on stock returns is lower (higher) in R&D intensive companies. Also, market reaction to earnings surprises is lower in the fourth quarter, and to revenue surprises it is higher in industries with oligopolistic competition. A comprehensive analysis indicates that, in contrast to previous studies for the full sample, in several contexts market reaction to earnings surprises is not higher than to revenue surprises.

Keywords: earnings surprises, revenue surprises, contextual analysis, information content, post-earnings announcement drift, financial statement analysis

1. INTRODUCTION

Numerous studies, beginning with Ball and Brown (1968) and Beaver (1968), have examined the information content of accounting earnings, earnings components and other financial statement line items. These studies find that stock returns react to information on earnings, revenues and other financial disclosures. The enormous interest in the subject is driven by the implications this has for equity valuation, fundamental analysis, forecasting, debt rating, standard setting and security regulation. While the bulk of the information content literature has concentrated on earnings and cash flows, one strand investigates the information content of revenues. Relating to the fact that firms announce revenues, rather than other financial variables, in their preliminary earnings announcements, and analysts provide revenue forecasts in addition to earnings forecasts, Ertimur et al. (2003) and Jegadeesh and Livnat (2006a) find that revenue surprises incrementally explain stock returns beyond earnings

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surprises. In addition, Ertimur et al. (2003) and Jegadeesh and Livnat (2006a) show that the market reacts more strongly to earnings surprises than to revenue surprises; while Jegadeesh and Livnat (2006b) indicate that the magnitude of the post-earnings announcement drift is positively correlated with the sign of the revenue surprises.

Although it is clear that investors' perceptions of the information content of accounting variables is colored by their contextual framework – company specification and industry structure – the information content literature has not focused on the contextual analysis of information in earnings and revenues. Such analysis may assist internal and external financial statement users in understanding the relative importance of revenues and earnings in various firm and industry contexts. This study extends Ertimur et al. (2003) and Jegadeesh and Livnat (2006a) by providing contextual framework for the incremental explanatory power of revenues (earnings) over earnings (revenues) in determining stock returns.

As documented in previous studies, revenues are an indicator of earnings persistence (Jegadeesh and Livnat, 2006a; and Gu et al., 2006), future operating performance (Ghosh et al., 2005) and have a relatively high autocorrelation (Ertimur et al., 2003). Therefore, my first contextual analysis refers to R&D-intensive companies, in which earnings volatility is relatively high (Kothari et al., 2002). In high R&D intensity companies, the importance of an indicator of earnings persistence and future outcome is higher, as earnings precision is lower.¹ As documented in the literature, revenue surprise is that kind of indicator. I show that in high R&D intensity companies, the market reaction to earnings surprises (revenue surprises) is lower (higher) than in low R&D intensity companies. As a result, the domination of earnings over revenues with regard to the influence on stock returns diminishes in high R&D intensity companies.

Another investigation concerns the differences in the explanatory power of earnings and revenues between fiscal quarters. Previous studies show a higher magnitude of earnings management (Cohen et al., 2005) and significantly larger discretionary write-offs (Elliott and Shaw, 1988, and Elliott and Hanna, 1996) in the fourth fiscal quarter than in the first three fiscal quarters. Earnings persistence and precision are therefore expected to be lower in the fourth quarter. Consistent with that argument, I find that the market reaction to earnings surprise is significantly lower in the fourth quarter.²

My third contextual analysis relates to industry characteristics as reflected by concentration and competition level. In industries with oligopolistic competition, market share strategy plays a more important role than in other sorts of competition, because a larger market share is an investment that might yield the ability to dictate prices, terms of supply and other economic variables in the future. An increase in revenues may lead to higher market share. Consistent with that notion, the influence of revenues on stock returns is higher for companies that operate in industries ruled by two to three dominant companies, that is, in an environment of oligopolistic competition. The influence of revenues on stock returns is not higher in a monopolistic environment, because market power already exists. Interestingly, the influence of revenues on stock

1 Similarly, Amir et al. (2003) find that the contribution of analysts to valuation carries relatively greater weight in R&D-intensive companies.

2 This could also be because of the interim reporting requirement and the integral approach to quarterly earnings as discussed in Collins et al. (1984), Mendenhall and Nichols (1988), Salamon and Stober (1994) and Rangan and Sloan (1998).

returns is lower when industry concentration is at its lowest level, due to the fact that market share does not change significantly in relation to competitive ability.³

A comprehensive analysis shows that for R&D-intensive companies in industries with oligopolistic competition, in the fourth fiscal quarter, the effect of earnings surprises on stock returns is not higher than the effect of revenue surprises. This result is in contrast to the results documented by Ertimur et al. (2003) and Jegadeesh and Livnat (2006a) for the full sample and emphasizes the importance of contextual analysis.

In addition to the contextual analysis regarding the relation between return and contemporaneous earnings and revenue surprises I investigate the market underreaction to these surprises. I find that the positive relation between return and past earnings surprise is lower for loss-reporting companies and for earnings announcements in the fourth fiscal quarter. Also, the post-earnings announcement drift is significantly weaker for R&D-intensive companies, for loss-reporting companies and in the fourth fiscal quarter. A combination of these specifications leads to zero and even negative post-earnings announcement drift.

The comparison between revenues and earnings as value drivers also shows that for the full sample, negative earnings surprises accompanied by positive revenue surprises lead to significantly negative abnormal returns. However, for R&D-intensive companies and companies that operate in environments of oligopolistic competition, negative earnings surprises accompanied by positive revenue surprises do not lead to significant changes in abnormal returns.

Overall, this study contributes to the literature in highlighting the importance of contextual analysis by showing that the market reaction to earnings and revenue surprises depends on R&D intensity, fiscal quarter and industry concentration level. It also indicates that contrary to the results documented in the literature for the full sample, it may be that in several contexts earnings do not dominate revenues with respect to market reaction. In analyzing revenues and earnings data according to firm- and industry-specific features, it also has implications for financial statement users.

The study proceeds as follows. Section 2 develops testable predictions. Section 3 discusses sample selection, defines variable and presents descriptive statistics. Section 4 contains empirical results. Section 5 provides concluding remarks.

2. BACKGROUND AND EMPIRICAL PREDICTIONS

The link between accounting parameters and stock returns has long been established in the theoretical and empirical accounting literature.⁴ Although the information content of revenues has not been the focus of the information content literature, it has nevertheless been investigated at several levels.⁵ Swaminathan and Weintrop (1991), Ertimur et al. (2003) and, recently, Jegadeesh and Livnat (2006a) indicate that revenue surprises have incremental explanatory power in determining stock returns. Ertimur et al. (2003) and Jegadeesh and Livnat (2006a) find that both revenues and earnings have information content, and that the incremental explanatory power of earnings is

3 On this issue, Stigler (1964) and Collins and Preston (1966) show that at very low concentration levels, changes in the level do not change profitability.

4 The following survey studies capture a significant portion of the relevant literature in this area: Lev and Ohlson (1982), Lev (1989), Kothari (2001), Holthausen and Watts (2001) and Dechow and Schrand (2004).

5 Hopwood and McKeown (1985) and Hoskin et al. (1986) argue that revenues do not have an incremental influence on stock returns and Davis (2002) investigates market reaction to revenues for internet companies.

higher than that of revenues. Jegadeesh and Livnat (2006a) also find that stock returns are related to past revenues, and indicate that post-announcement abnormal returns are positively correlated with revenue surprises. Jegadeesh and Livnat (2006b) show that the magnitude of the post-earnings announcement drift is stronger when revenue surprises and earnings surprises have the same sign.

The economic interpretation of the information content of revenues can be divided into two categories: the first and trivial explanation is that revenues generate current earnings and cash flows; the second explanation is that revenues serve as an indicator of persistence and future performance. As Ertimur et al. (2003, p.185) point out:

since firms announce both revenues and earnings in the preliminary earnings announcement, investors can use the disclosure of revenues to better assess and interpret the quality of the disclosed earnings signal.

Therefore, the relative role of revenues as a value driver and indicator of future cash flows is expected to be more important in contexts in which current earnings are a weak indicator of future earnings. In this context, Jegadeesh and Livnat (2006a) show that revenues are an indicator of persistence in earnings' growth, Gu et al. (2006) find that the persistence of earnings surprises increases when it is driven by revenue surprises rather than by expenses surprises, while Ertimur et al. (2003) show that revenues have relatively high autocorrelation. Ghosh et al. (2005) contribute to this line of research by showing that earnings for companies with sustained increases in both earnings and revenues are more persistent, and future operating performance (measured as return on assets) is higher than for companies with a sustained increase just in earnings.

In this study, I extend Ertimur et al. (2003) and Jegadeesh and Livnat (2006a) by analyzing the market reaction to earnings and revenue surprises according to firm- and industry-specific attributes. Since revenues have relatively high autocorrelation, and since they serve as an indicator of future performance and earnings' persistence, I expect to find that the market reaction to revenue surprises (earnings surprises) is higher (lower) for companies with relatively high uncertainty and lower earnings precision, such as R&D-intensive companies. Kothari et al. (2002) find positive relations between R&D expenditure and earnings variability. Amir et al. (2003) also imply the importance of a future performance indicator in R&D-intensive companies, showing that the incremental contribution of analysts is higher in R&D-intensive companies than in companies low on R&D. The environment of R&D-intensive companies is characterized by higher uncertainty regarding future performance. It is an environment that evokes a need for parameters that serve as proxies for stability and further persistence, and one such parameter, as explained above, is revenues. Another reason for the importance of revenues in R&D-intensive companies may be driven by a life cycle argument. Anthony and Ramesh (1992) find that the market reaction to revenue surprises is higher for companies in the early stages of their life cycle, and can be attributed to the efforts they make to achieve cost and demand advantages over competitors.

I also expect to find that the information content of earnings surprises relates to the effect of fiscal quarter. Cohen et al. (2005) find that earnings management is higher in the fourth fiscal quarter than in the first three and that discretionary write-offs tend to be larger in the fourth quarter (Elliott and Shaw, 1988; and Elliott and Hanna, 1996). In addition, the interim reporting requirement and the integral approach to quarterly

earnings influence the time-series properties of quarterly earnings and might lead to higher forecast error and lower information content of earnings in the fourth quarter (Collins et al., 1984; Mendenhall and Nichols, 1988; Salamon and Stober, 1994; and Rangan and Sloan, 1998). Since earnings management, discretionary write-offs, the interim reporting requirement and the integral approach to quarterly earnings are negatively correlated with earnings precision, I expect to find that the market reaction to earnings surprises is lower in the fourth fiscal quarter than in the first three.

As for industry specification, I expect market reaction to revenues to be higher in industries with oligopolistic competition, where each company accounts for a significant portion of the market-wide revenues. In cases of oligopolistic competition, a larger market share may be regarded as an investment that can yield the ability to dictate future economic parameters, such as prices and supply terms. For this reason, I expect revenues to be a significant indicator of future outcomes and to be more important for firms operating in industries with oligopolistic competition.⁶ Therefore, I expect the market reaction to revenue surprises to be higher for companies that operate in industries with oligopolistic competition. This argument is strengthened by the discussion concerning capacity as an investment in entry deterrence. Martin (2002) argues that investment in capacity may discourage rival investment, and enable the incumbent to use market structure to exercise market power. In this context, revenues may serve as a proxy for capacity, thereby conditioning market structure in a way that allows the exercise of market power. In addition, I expect the market reaction to revenue surprises to be lower when the industry concentration is very low (a high degree of competition). Prior studies show that when the concentration level (measured by the *Herfindahl-Hirschman Index*) is very low, differences in concentration level do not change profitability (Stigler, 1964; and Collins and Preston, 1966); hence, market-share strategy is less important.

This study contributes to the information content literature by focusing on the role earnings and revenues play, depending on the specifications of the company being analyzed and the industry in which it operates. In particular, I expect the domination of earnings over revenue surprises with respect to market reaction to diminish in R&D-intensive companies, in the fourth fiscal quarter, and in industries with oligopolistic competition.

3. SAMPLE, VARIABLES AND DESCRIPTIVE STATISTICS

The initial sample includes all public companies covered by the Compustat and CRSP databases over the period 1974–2005. I delete observations with missing data on size-adjusted returns (SAR), standardized unexpected earnings (SUE) and standardized unexpected revenue (SURG). I exclude financial institutions and public utilities (4-digit SIC codes 6000–6999 and 4900–4999) because the structure of their financial statements is incompatible with those of other companies. To limit the effect of extreme observations, I rank the sample according to SUE, SURG and SAR and remove the

6 Even though revenues may serve as a proxy for market share, market power is not solely dependent on market concentration and market share. It is also a function of entry conditions, substitute products, demand elasticity and switching costs. In the extreme, in a perfect contestable market and where there are no entry or exit costs/barriers, even a monopoly cannot, in the long run, set a price that is higher than the minimum average cost. It should also be noted that an increase in revenues is not necessarily translated into an increase in market share.

extreme 1% of the observations on each side. As for the R&D sample, the extreme 1% of the highest observations for the R&D to revenues ratio (RDR) is deleted (RDR higher than 102%). R&D expenses and revenues used to calculate RDR are in annual terms.

The market reaction to earnings and revenue surprises is measured using size-adjusted returns around the announcement of quarterly earnings. Size-adjusted returns (SAR) are calculated as raw returns minus the return on the portfolio of all companies in the same size decile. The 4-day returns window contains days -2 through $+1$, where day 0 is the earnings announcement date, as stated in Compustat.

In calculating SUE and SURG, I follow the methodology of Jegadeesh and Livnat (2006a) by calculating standardized unexpected earnings (SUE) as the standardized difference between quarterly earnings per share (EPS) and the expected EPS:

$$SUE_{i,t} = \frac{EPS_{i,t} - E(EPS_{i,t})}{S_{i,t}}$$

where $E(EPS_{i,t})$ is the expected quarterly earnings per share for firm i in quarter t , and $S_{i,t}$ is the standard error of $EPS_{i,t}$. $E(EPS_{i,t})$ is calculated as EPS in the same quarter of the previous year, plus a drift: $E(EPS_{i,t}) = EPS_{i,t-4} + D_{i,t}$, where $D_{i,t}$ is the average drift of EPS over the previous 8 quarters, measured as $D_{i,t} = \frac{1}{8} \sum_{j=1}^8 (EPS_{i,t-j} - EPS_{i,t-j-4})$. $S_{i,t}$, the standard error of the unexpected part of the EPS, is calculated as:

$$S_{i,t} = \frac{1}{7} \sqrt{\sum_{j=1}^8 (EPS_{i,t-j} - E(EPS)_{i,t-j})^2}$$

Standardized unexpected revenue (SURG) is calculated in a similar manner but using revenue per share.

To examine the market reaction to SUE and SURG for high and low R&D intensity companies, the average R&D to revenues ratio (RDR) was calculated for each company (annual R&D expenditures divided by annual revenues). High (low) R&D intensity companies are defined as companies with RDR higher (lower) than 5%.

In order to inspect the market reaction to SUE and SURG according to industry concentration level, *Herfindahl-Hirschman Index* for industry concentration is calculated (HHI). HHI is the sum of the squares of market shares in revenues for each firm: $HHI = \sum_{i=1}^N MS_i$, where MS is market share in annual revenues for firm i , and N is total number of companies in the industry. MS is calculated as annual revenue for firm i divided by total revenues in the industry:

$$MS_i = \frac{\text{Revenue}_i}{\sum_{i=1}^N \text{Revenue}_i}$$

HHI is calculated as the average over the years for each industry using public companies covered by the Compustat with data on annual revenues. Industry classification was according to 4-digit SIC codes.⁷

⁷ The value of HHI lies between 0 and 10,000, where 10,000 means a single company in the industry, and a value of zero indicates that the industry is characterized by a large number of infinitesimally small firms. When there are N equal-size companies, HHI equals $10,000/N$. The inequality between companies

Table 1 contains descriptive statistics for the main variables. Panel A contains statistics for the full sample, Panel B presents statistics for the high R&D intensity companies (RDR higher than 5%) and Panel C includes statistics for companies that operate in industries with oligopolistic competition (HHI between 4,000 and 6,000).⁸ I report

Table 1
Descriptive Statistics

<i>Variable</i>	<i>Mean</i>	<i>Std Dev</i>	<i>5th Pctl</i>	<i>25th Pctl</i>	<i>Median</i>	<i>75th Pctl</i>	<i>95th Pctl</i>
Panel A: Full Sample (N = 281,177)							
SAR	0.00	0.08	-0.12	-0.04	-0.00	0.04	0.14
SUE	-0.17	3.87	-6.84	-1.84	0.00	1.85	6.06
SURG	0.26	3.76	-6.03	-2.21	0.35	2.65	6.43
M/B	3.65	205.41	0.48	0.98	1.63	2.79	7.35
LMV	4.88	2.09	1.75	3.33	4.72	6.28	8.53
Panel B: High R&D Intensity Sample (N = 59,085)							
SAR	0.00	0.09	-0.15	-0.05	-0.00	0.05	0.17
SUE	-0.15	3.86	-6.73	-1.79	-0.01	1.84	6.06
SURG	0.30	3.72	-6.02	-2.08	0.47	2.66	6.32
M/B	7.62	438.83	0.72	1.45	2.47	4.46	11.99
LMV	5.01	2.14	1.93	3.47	4.77	6.32	8.95
Panel C: Oligopolistic Competition Sample (N = 33,708)							
SAR	0.00	0.08	-0.12	-0.04	0.00	0.04	0.14
SUE	-0.23	3.94	-7.03	-1.89	-0.02	1.82	5.99
SURG	0.21	3.75	-5.99	-2.26	0.31	2.62	6.29
M/B	2.92	29.28	0.47	0.94	1.54	2.60	6.47
LMV	4.61	2.04	1.66	3.12	4.40	5.93	8.20

Notes:

¹ The table provides descriptive statistics on the research variables for the full sample (Panel A), companies with an R&D to revenues ratio higher than 5% (Panel B) and companies that operate under oligopolistic competition where the *Herfindahl-Hirschman Index* is between 4,000 and 6,000 (Panel C).

² Definitions of variables:

- SAR – size-adjusted returns – raw returns minus the return on the portfolio of all companies in the same size decile. The return window contains the 4 trading days from -2 through +1, where 0 is the earnings announcement date, as stated in Compustat.
- SUE – standardized unexpected earnings – quarterly earnings per share minus earnings per share in the same quarter of the previous year minus a drift, scaled by the standard deviation of earnings in the prior 8 quarters.
- SURG – standardized unexpected revenue – similar to SUE but using revenue per share.
- M/B – market-to-book ratio – market value of common equity divided by book value of common equity at quarter-end.
- LMV – log normal of market value of common equity at quarter-end – size variable.

influences HHI more than the number of companies. The general limitations associated with measurement of concentration should be noted. They include definition of an industry (level of specification), geographical issues (in US measurement versus global measurement), regulation, and business connections between companies.

⁸ In evaluating horizontal mergers, the Department of Justice and the Federal Trade Commission in the USA use 2-digit SIC codes and regard markets with an HHI below 1,000 as unconcentrated, between 1,000 and 1,800 as moderately concentrated and above 1,800 as highly concentrated. However, I have used 4-digit SIC codes for industry code; using 2-digit SIC codes would have led to a lower concentration.

statistics for the above variables as well as two additional variables: market-to-book ratio (M/B), measured as market value of common equity divided by book value of equity at quarter-end, and firm size (LMV), measured as the log normal of market value of common equity at quarter-end.

For all categories, the mean and median SAR are zero, as expected by construction. For all categories, the mean SUE is negative but the median is close to zero (it is zero for the full sample), indicating that SUE is skewed to the left. SURG is also left-skewed, but the mean and median SURG are positive for all categories. The distribution of the market-to-book ratios is skewed to the right as the mean (3.65, 7.62, 2.92) is larger than the median (1.63, 2.47, 1.54) in the full, high R&D, and oligopolistic competition sample, respectively. As expected, the market-to-book ratio, which serves as a measure for growth and value companies, is higher for the high R&D intensity companies than for the full sample. Firm size is similar across sample.

In Panel A of Table 2 I present Pearson and Spearman correlations between SUE and SURG in the full sample and the sub-samples. I compute cross-sectional correlations in each year and then average these yearly correlations over all years. Pearson and Spearman correlations between SUE and SURG are positive and significantly different from zero at the 1% level. Spearman correlations are only between 0.36 (for the full sample and most of the sub-samples) and 0.42 (for the high R&D intensity sample), suggesting that earnings and revenues provide different signals. The relatively high correlation between SUE and SURG for the high R&D intensity sample might reflect the fact that in high technology industries fixed costs are low compared to traditional industries.

Panel B of Table 2 presents average firm-by-firm Pearson (left) and Spearman (right) correlations for SUE, SURG and their corresponding lagged variable. It also contains the average firm-by-firm correlations between SUE and past SURG, and between SURG and past SUE. Consistent with previous studies (Ertimur et al., 2003; and Jegadeesh and Livnat, 2006a) I find that the first autocorrelations of SUE and SURG are significantly positive and the SURG first autocorrelation is higher than the SUE first autocorrelation. Also, these autocorrelations are similar for the full sample and the four sub-samples (high R&D intensity, low R&D intensity, oligopolistic competition and competitive competition sample). For example, the Spearman correlations for SUE (SURG) are in the range of 0.32–0.35 (0.46–0.48). The correlations between SUE and past SURG and between SURG and past SUE are significantly positive and similar across the full sample and the four sub-samples tested. The Spearman correlations are in the range of 0.12–0.14 for the relation between SUE and past SURG and in the range of 0.15–0.17 for the relation between SURG and past SUE. The similarity of the correlations across the four sub-samples implies robustness of the relation between earnings persistence and revenue growth to R&D intensity and industry concentration level. This could be the result of the relatively high persistence of revenue growth diminishing the effect of variety in R&D expenses and concentration level in the industry.

The results in Panel B are consistent with previous studies and show that revenues indicate earnings persistence and have relatively high persistence in all the sub-samples tested. Thus, they support my prediction regarding the importance of revenues in industries with relatively high earnings volatility, where an indicator of persistence and earnings quality is most needed.

Table 2
Selected Correlations

Panel A: Correlation between SUE and SURG			
<i>Sample</i>	<i>N</i>	<i>Pearson Correlation</i>	<i>Spearman Correlation</i>
Full Sample	281,117	0.34	0.36
High R&D Intensity Sample	59,085	0.40	0.42
Low R&D Intensity Sample	119,175	0.33	0.35
Oligopolistic Competition Sample	33,708	0.34	0.36
Competitive Competition Sample	108,546	0.34	0.36
Panel B: First Correlation of SUE and SURG			
<i>Sample</i>	<i>Number of Companies</i>	$Corr(SUE_t, SURG_{t-1})$	$Corr(SUE_{t-1}, SURG_t)$
Full Sample	6,911	0.26, 0.33	0.11, 0.12
High R&D Intensity Sample	1,708	0.27, 0.35	0.13, 0.14
Low R&D Intensity Sample	2,835	0.26, 0.32	0.12, 0.13
Oligopolistic Competition Sample	829	0.26, 0.33	0.11, 0.12
Competitive Competition Sample	2,697	0.26, 0.33	0.12, 0.12

Notes:

¹ Panel A presents average yearly Pearson and Spearman correlations between SUE and SURG for the full sample and the sub-samples. Panel B presents average firm-by-firm Pearson (left) and Spearman (right) correlations for SUE and SURG and their corresponding lagged variable. Panel B includes only firms with at least 8 observations.

² High (Low) R&D intensity companies are companies with R&D to revenues ratio higher (lower) than 5%.

³ Oligopolistic competition – where the *Herfindahl-Hirschman Index* is between 4,000 and 6,000.

⁴ Competitive competition – where the *Herfindahl-Hirschman Index* is below 2,000.

⁵ Definitions of variables:

- SUE – standardized unexpected earnings – quarterly earnings per share minus earnings per share in the same quarter of the previous year minus a drift, scaled by the standard deviation of earnings in the prior 8 quarters.
- SURG – standardized unexpected revenue – similar to SUE but using revenue per share.

4. EMPIRICAL RESULTS

(i) Contextual Analysis

To examine whether the market reaction to earnings and revenue surprises depends on R&D intensity, industry concentration level and fiscal quarter I use regression analysis. I estimate equation (1) below for each year and compute coefficients and *t*-statistics as in Fama and MacBeth (1973) by performing 32-yearly regressions. As in Ertimur et al. (2003), the dependent variable in equation (1) is size-adjusted return (SAR). The independent variables are SUE and SURG. D_{RD} , D_H , D_{Q4} and D_L are dummy variables that obtain the value of '1' for high R&D intensity companies (RDR higher than 5%), an oligopolistic competition environment (HHI between 4,000 and 6,000), the fourth fiscal quarter and loss-reporting companies, respectively, and '0' otherwise. The regression model is therefore:

$$\begin{aligned} \text{SAR}_{i,t} = & \beta_{0t} + D_{RD} + D_H + D_{Q4} + D_L + \beta_{1t} \times \text{SURG}_{i,t} + \beta_{2t} \times D_{RD} \times \text{SURG}_{i,t} \\ & + \beta_{3t} \times D_H \times \text{SURG}_{i,t} + \beta_{4t} \times D_{Q4} \times \text{SURG}_{i,t} + \beta_{5t} \times D_L \times \text{SURG}_{i,t} \\ & + \beta_{6t} \times \text{SUE}_{i,t} + \beta_{7t} \times D_{RD} \times \text{SUE}_{i,t} + \beta_{8t} \times D_H \times \text{SUE}_{i,t} \\ & + \beta_{9t} \times D_{Q4} \times \text{SUE}_{i,t} + \beta_{10t} \times D_L \times \text{SUE}_{i,t} + \varepsilon_{i,t}. \end{aligned} \quad (1)$$

Table 3 presents five specifications of equation (1).⁹ The first specification includes only SUE and SURG. Consistent with Ertimur et al. (2003) and Jegadeesh and Livnat (2006a), the coefficients on both variables are positive, as expected, and the coefficient on SUE is larger than that on SURG. This result suggests that the effect of earnings surprises on abnormal stock returns is larger than that of revenue surprises, but that revenue surprises are incrementally informative beyond earnings surprises.

The second specification includes a dummy variable for high R&D intensity companies and suggests that revenue surprises (earnings surprises) have higher (lower) explanatory power in determining stock returns in high R&D companies: the coefficient on $D_{RD} \times \text{SURG}$ ($D_{RD} \times \text{SUE}$) is positive (negative) and significant at the 1% level. In high R&D intensity companies, an estimator for earnings quality and future performance has higher information content due to low earnings precision. As discussed in Section 2, revenues may function as an indicator of future operating performance and persistence in earnings. To test robustness, I also use the market-to-book ratio as an additional explanatory variable in the regression process, including it as a growth parameter, and find that it does not change the results, implying that R&D is an additional factor beyond growth. In addition, as explained in Section 2, there is a different motivation for testing the R&D effect, and the results regarding earnings surprises are therefore opposite to the results in Ertimur et al. (2003) regarding growth companies.

Specification 3 includes a dummy variable for companies that operate in industries with oligopolistic competition. Specification 3 shows that the influence of SURG on stock returns is significantly higher when HHI lies between 4,000 and 6,000, that is, environment of oligopolistic competition, with two to three dominant companies ruling

⁹ To test robustness, I also use the market-to-book ratio as an additional explanatory variable in the regression analysis process, and find that the results are robust to the inclusion of a growth parameter (not tabulated).

Table 3
Contextual Analysis

<i>Spec.</i>	<i>SURG</i>	$D_{RD} \times$ <i>SURG</i>	$D_H \times$ <i>SURG</i>	$D_{Q4} \times$ <i>SURG</i>	$D_L \times$ <i>SURG</i>	<i>SUE</i>	$D_{RD} \times$ <i>SUE</i>	$D_H \times$ <i>SUE</i>	$D_{Q4} \times$ <i>SUE</i>	$D_L \times$ <i>SUE</i>	<i>Adj-R²</i> <i>N</i>
1	Coef. 1.23** <i>t</i> -stat. 10.81					2.85** 29.09					0.04 281,177
2	Coef. 1.20** <i>t</i> -stat. 12.72	0.53** 3.13				3.00** 32.04	-0.63** -5.97				0.04 178,260
3	Coef. 1.19** <i>t</i> -stat. 10.33		0.34** 2.68			2.82** 28.24		0.21 1.67			0.04 281,177
4	Coef. 1.23** <i>t</i> -stat. 11.18			-0.06 -0.58		3.16** 30.31			-0.83** -7.87		0.04 281,177
5	Coef. 1.04** <i>t</i> -stat. 10.52	0.53** 2.98	0.43* 2.46	0.00 0.04	-0.40* -2.60	3.48** 31.62	-0.49** -4.22	0.19 1.41	-0.79** -7.02	-1.90** -13.34	0.05 178,260

Notes:

¹ The table presents mean coefficients and associated *t*-statistics for yearly cross-sectional Fama-MacBeth regressions (equation (1)):

$$SAR_{i,t} = \beta_{0t} + D_{RD} + D_H + D_{Q4} + D_L + \beta_{1t} \times SURG_{i,t} + \beta_{2t} \times D_{RD} \times SURG_{i,t} + \beta_{3t} \times D_H \times SURG_{i,t} + \beta_{4t} \times D_{Q4} \times SURG_{i,t} + \beta_{5t} \times D_L \times SURG_{i,t} + \beta_{6t} \times SUE_{i,t} + \beta_{7t} \times D_{RD} \times SUE_{i,t} + \beta_{8t} \times D_H \times SUE_{i,t} + \beta_{9t} \times D_{Q4} \times SUE_{i,t} + \beta_{10t} \times D_L \times SUE_{i,t} + \varepsilon_{i,t}. \quad (1)$$

² Definitions of variables:

- SAR – size-adjusted returns – raw returns minus the return on the portfolio of all companies in the same size decile. The return window contains the 4 trading days from -2 through +1, where 0 is the earnings announcement date, as stated in Compustat.
- SUE – standardized unexpected earnings – quarterly earnings per share minus earnings per share in the same quarter of the previous year minus a drift, scaled by the standard deviation of earnings in the prior 8 quarters.
- SURG – standardized unexpected revenue – similar to SUE but using revenue per share.
- D_{RD} – a dummy variable that obtains the value of ‘1’ if the R&D to revenues ratio is higher than 5%, and ‘0’ otherwise.
- D_H – a dummy variable that obtains the value of ‘1’ if the *Herfindahl-Hirschman Index* is between 4,000 and 6,000, and ‘0’ otherwise.
- D_{Q4} – a dummy variable that obtains the value of ‘1’ for the fourth quarter and ‘0’ otherwise.
- D_L – a dummy variable that obtains the value of ‘1’ if earnings per share are negative, and ‘0’ otherwise.

³ Coefficient estimates are multiplied by 1,000.

*, ** – significantly different from zero at the 0.05 and 0.01 level, respectively.

the market.¹⁰ In industries with oligopolistic competition, market strategy plays an important role because a larger market share is an investment that can yield the ability to influence future economic variables in the market.¹¹

Specification 4 includes a dummy variable for the fourth quarter, indicating that the market reaction to earnings surprises is significantly decreasing in the fourth quarter. The change in the market reaction to revenue surprises is not significantly different from zero, which reduces the domination of earnings as a key value driver. This finding may be linked to a high level of earnings management and discretionary write-offs in the fourth quarter, as well as to the interim reporting requirement and the integral approach to quarterly earnings.

Specification 5 is a comprehensive one that includes all the dummy variables in the regression analysis. Since the earnings response coefficient is lower in loss-reporting companies (Hayn, 1995), I control for loss-reporting companies in this specification. Results are consistent with specifications 2 to 4. The result for loss-reporting companies is consistent with Hayn (1995) as the coefficient on $D_L \times SUE$ is negative (-1.90 and significantly different from zero at the 1% level). The coefficient on $D_L \times SURG$ is also negative (-0.40 and significantly different from zero only at the 5% level) but significantly lower (in absolute terms) than the coefficient on $D_L \times SUE$. After aggregating all the dummy variables, the coefficient on revenue surprises is 1.6, and significantly higher than the coefficient on earnings surprises (0.49). After aggregating the coefficients on the dummy variables for high R&D intensity companies, industry concentration and the fourth fiscal quarter, the coefficient on revenues surprises is 2.00, and not significantly different than the coefficient on earnings surprises (2.20).¹²

The conclusion from Table 3 is that, the market reaction to earnings and revenue surprise depends on firm specification (R&D intensity), industry specification (degree of concentration) and fiscal quarter. Moreover, in high R&D intensity companies, an oligopolistic competition environment and in the fourth fiscal quarter the dominance of earnings over revenues decreases and the effect of earnings surprises on abnormal stock returns is not necessarily larger than that of revenue surprises. This result is in contrast to the result in the full sample as reported by Ertimur et al. (2003) and Jegadeesh and Livnat (2006a). Regarding the effect of firm specification on market reaction, it can be concluded that, due to lower earnings precision, revenues rather than earnings have higher information content. Amir et al. (2003) indicate that analysts play a more important role in high R&D intensity companies and in loss-reporting companies, implying that in these kinds of companies, indicators of future performance are more valuable.

10 Robustness testing (not tabulated) indicates that these results occur for the full sample and for manufacturing companies (4-digit SIC codes 2000–3999).

11 I also find that the effect of revenue surprises on stock returns is significantly lower when HHI lies between 0 and 2,000 (not tabulated). This result can be explained by the fact that, at the lower edge of HHI, market share does not change significantly, since it does not lead to the ability to dictate prices or supply terms. Several studies regarding the influence of industry concentration on profitability have found that, when HHI is relatively low (under 2,500), differences in HHI do not change profitability (Stigler, 1964; and Collins and Preston, 1966), implying that when HHI is relatively low, market-share strategy is less important.

12 Note that the coefficient on $D_H \times SUE$ is not significantly different from zero.

(ii) *Timeliness of the Effect of Revenue and Earnings Surprises*

Previous studies show that the market is inefficient in the semi-strong form claiming that publicly available information is not fully and immediately reflected in stock prices. For example, Jegadeesh and Livnat (2006a) show that the market demonstrates a delayed reaction to past earnings and revenue surprises. In the previous subsection I show that the market reaction to *contemporaneous* SUE and SURG depends on firm and industry specifications. The next step is to investigate whether the market reaction to *past* SUE and SURG also depends on specific attributes. Similarly to my examination in the previous subsection, Table 4 shows regression results for five specifications of equation (2):

$$\begin{aligned} \text{SAR}_{i,t} = & \gamma_{0t} + D_{RD} + D_H + D_{Q4} + D_L + \gamma_{1t} \times \text{SURG}_{i,t-1} + \gamma_{2t} \times D_{RD} \times \text{SURG}_{i,t-1} \\ & + \gamma_{3t} \times D_H \times \text{SURG}_{i,t-1} + \gamma_{4t} \times D_{Q4} \times \text{SURG}_{i,t-1} + \gamma_{5t} \times D_L \times \text{SURG}_{i,t-1} \\ & + \gamma_{6t} \times \text{SUE}_{i,t-1} + \gamma_{7t} \times D_{RD} \times \text{SUE}_{i,t-1} + \gamma_{8t} \times D_H \times \text{SUE}_{i,t-1} \\ & + \gamma_{9t} \times D_{Q4} \times \text{SUE}_{i,t-1} + \gamma_{10t} \times D_L \times \text{SUE}_{i,t-1} + \mu_{i,t}. \end{aligned} \quad (2)$$

Consistent with previous studies, specification 1 shows a positive and significant relation between size-adjusted-returns and past earnings and revenues surprises. Specifications 2–5 show that the relation between SAR and past SURG is not different for high R&D intensity companies or companies that operate in an oligopolistic competition environment. Nor is it different in the fourth quarter. However, specification 5 shows that the market underreaction to SURG is significantly higher for loss-reporting companies. Contrary to SURG, the magnitude of the relation between SAR and past SUE depends on the specific context. The relation between SAR and past SUE is significantly lower for SUE announced in the fourth quarter and for loss-reporting companies.¹³ The main conclusion from Table 4 is that the lower relation between SAR and contemporaneous SUE, documented in Table 3 for the fourth quarter reports and the loss-reporting companies, is followed by a lower underreaction to SUE.

(iii) *Post-Announcement Drift and the Contextual Analysis*

The post-earnings announcement drift is a well known result in the information content literature and many studies document the underreaction of stock prices to earnings surprises. Recently, Jegadeesh and Livnat (2006a) find post-announcement drift in the direction of earnings and revenue surprises and Jegadeesh and Livnat (2006b) also show that the magnitude of the drift is stronger when revenue surprises and earnings surprises have the same sign. The question investigated in this subsection is whether the post-announcement drift is related to firm specifications and industry characteristics. Following Jegadeesh and Livnat (2006a), I calculate the post-announcement size-adjusted return in a window starting from two trading days after the earnings announcement date through six months after the earnings announcement date [hereinafter: SAR (6)]. Table 5 provides regression results for five specifications of

13 Interestingly, the relation is stronger for companies that operate in an oligopolistic competition environment.

Table 4
The Relation Between Return and Past Revenue and Earnings Surprises

<i>Spec.</i>	$SUR_{i,t-1}$	$D_{RD} \times SUR_{i,t-1}$	$D_H \times SUR_{i,t-1}$	$D_{Q4} \times SUR_{i,t-1}$	$D_L \times SUR_{i,t-1}$	$SUE_{i,t-1}$	$D_{RD} \times SUE_{i,t-1}$	$D_H \times SUE_{i,t-1}$	$D_{Q4} \times SUE_{i,t-1}$	$D_L \times SUE_{i,t-1}$	<i>Adj. R²</i>	<i>N</i>
1	Coef. 0.54** <i>t</i> -stat. 11.49					0.86** 10.43					0.01 271,824	
2	Coef. 0.59** <i>t</i> -stat. 9.57	-0.03 -0.25				0.91** 9.48	-0.20 -1.34				0.01 171,997	
3	Coef. 0.51** <i>t</i> -stat. 10.04		0.17 1.58			0.84** 10.59		0.14 1.12			0.01 271,824	
4	Coef. 0.49** <i>t</i> -stat. 9.67			0.14 1.41		1.10** 11.36			-0.68** -7.22		0.01 271,824	
5	Coef. 0.44** <i>t</i> -stat. 5.33	-0.08 -0.61	0.11 0.76	0.09 0.65	0.29* 2.14	1.18** 10.31	-0.15 -1.01	0.33* 1.99	-0.70** -5.78	-0.63** -4.91	0.01 171,997	

Notes:

¹ The table presents mean coefficients and associated *t*-statistics for yearly cross-sectional Fama-MacBeth regressions (equation (2)):

$$SAR_{i,t} = \gamma_{0t} + D_{RD} + D_H + D_{Q4} + D_L + \gamma_{1t} \times SUR_{i,t-1} + \gamma_{2t} \times D_{RD} \times SUR_{i,t-1} + \gamma_{3t} \times D_H \times SUR_{i,t-1} + \gamma_{4t} \times D_{Q4} \times SUR_{i,t-1} + \gamma_{5t} \times D_L \times SUR_{i,t-1} + \gamma_{6t} \times SUE_{i,t-1} + \gamma_{7t} \times D_{RD} \times SUE_{i,t-1} + \gamma_{8t} \times D_H \times SUE_{i,t-1} + \gamma_{9t} \times D_{Q4} \times SUE_{i,t-1} + \gamma_{10t} \times D_L \times SUE_{i,t-1} + \mu_{i,t} \quad (2)$$

² Definitions of variables:

- SAR – raw returns minus the return on the portfolio of all companies in the same size decile. The return window contains the 4 trading days from -2 through +1, where 0 is the earnings announcement date, as stated in Compustat.
- SUE – standardized unexpected earnings – quarterly earnings per share minus earnings per share in the same quarter of the previous year minus a drift, scaled by the standard deviation of earnings in the prior 8 quarters.
- SURG – standardized unexpected revenue – similar to SUE but using revenue per share.
- D_{RD} – a dummy variable that obtains the value of '1' if the R&D to revenues ratio is higher than 5%, and '0' otherwise.
- D_H – a dummy variable that obtains the value of '1' if the *Herfindahl-Hirschman Index* is between 4,000 and 6,000, and '0' otherwise.
- D_{Q4} – a dummy variable that obtains the value of '1' for the fourth quarter and '0' otherwise.
- D_L – a dummy variable that obtains the value of '1' if earning per share are negative, and '0' otherwise.

³ Coefficient estimates are multiplied by 1,000.

*, ** – significantly different from zero at the 0.05 and 0.01 level, respectively.

Table 5
Post-Announcement Returns

<i>Spec.</i>	<i>SURG</i>	$D_{RD} \times$ <i>SURG</i>	$D_H \times$ <i>SURG</i>	$D_{Q4} \times$ <i>SURG</i>	$D_L \times$ <i>SURG</i>	<i>SUE</i>	$D_{RD} \times$ <i>SUE</i>	$D_H \times$ <i>SUE</i>	$D_{Q4} \times$ <i>SUE</i>	$D_L \times$ <i>SUE</i>	<i>Adj-R²</i> <i>N</i>
1	Coef. 2.54** <i>t</i> -stat. 8.24					4.20** 12.29					0.01 233,910
2	Coef. 2.81** <i>t</i> -stat. 9.31	-0.14 -0.14				4.53** 11.06	-2.43** -3.15				0.02 168,850
3	Coef. 2.46** <i>t</i> -stat. 7.80		0.70 1.12			4.18** 11.64		0.23 0.37			0.01 233,910
4	Coef. 2.63** <i>t</i> -stat. 7.60			-0.69 -1.30		4.91** 14.11			-1.90** -4.96		0.01 233,910
5	Coef. 2.30** <i>t</i> -stat. 5.52	-0.46 -0.44	0.37 0.50	-0.62 -1.03	2.28* 2.26	5.64** 10.62	-2.23** -2.87	0.32 0.42	-2.18** -4.86	-3.61** -5.89	0.02 168,850

Notes:

¹ The table presents mean coefficients and associated *t*-statistics for yearly cross-sectional Fama-MacBeth regressions (equation (3)):

$$SAR(6)_{i,t} = \delta_{0t} + D_{RD} + D_H + D_{Q4} + D_L + \delta_{1t} \times SURG_{i,t} + \delta_{2t} \times D_{RD} \times SURG_{i,t} + \delta_{3t} \times D_H \times SURG_{i,t} + \delta_{4t} \times D_{Q4} \times SURG_{i,t} + \delta_{5t} \times D_L \times SURG_{i,t} + \delta_{6t} \times SUE_{i,t} + \delta_{7t} \times D_{RD} \times SUE_{i,t} + \delta_{8t} \times D_H \times SUE_{i,t} + \delta_{9t} \times D_{Q4} \times SUE_{i,t} + \delta_{10t} \times D_L \times SUE_{i,t} + \omega_{i,t} \quad (3)$$

² Definitions of variables:

- *SAR* (6) – size-adjusted-returns from 2 trading days after the earnings announcement date through 6 months after the earnings announcement date.
- *SUE* – standardized unexpected earnings – quarterly earnings per share minus earnings per share in the same quarter of the previous year minus a drift, scaled by the standard deviation of earnings in the prior 8 quarters.
- *SURG* – standardized unexpected revenue – similar to *SUE* but using revenue per share.
- *D_{RD}* – a dummy variable that obtains the value of ‘1’ if the R&D to revenues ratio is higher than 5%, and ‘0’ otherwise.
- *D_H* – a dummy variable that obtains the value of ‘1’ if the *Herfindahl-Hirschman Index* is between 4,000 and 6,000, and ‘0’ otherwise.
- *D_{Q4}* – a dummy variable that obtains the value of ‘1’ for the fourth quarter and ‘0’ otherwise.
- *D_L* – a dummy variable that obtains the value of ‘1’ if earnings per share are negative, and ‘0’ otherwise.

³ Coefficient estimates are multiplied by 1,000.

*, ** – significantly different from zero at the 0.05 and 0.01 level, respectively.

equation (3):

$$\begin{aligned} \text{SAR}(6)_{i,t} = & \delta_{0t} + D_{RD} + D_H + D_{Q4} + D_L + \delta_{1t} \times \text{SURG}_{i,t} + \delta_{2t} \times D_{RD} \times \text{SURG}_{i,t} \\ & + \delta_{3t} \times D_H \times \text{SURG}_{i,t} + \delta_{4t} \times D_{Q4} \times \text{SURG}_{i,t} + \delta_{5t} \times D_L \times \text{SURG}_{i,t} \\ & + \delta_{6t} \times \text{SUE}_{i,t} + \delta_{7t} \times D_{RD} \times \text{SUE}_{i,t} + \delta_{8t} \times D_H \times \text{SUE}_{i,t} \\ & + \delta_{9t} \times D_{Q4} \times \text{SUE}_{i,t} + \delta_{10t} \times D_L \times \text{SUE}_{i,t} + \omega_{i,t}. \end{aligned} \quad (3)$$

The first specification is consistent with previous studies and documents the post-announcement drift for earnings and revenue surprises in the full sample. Specifications 2–4 indicate that the magnitude of the market underreaction to SURG does not change for high R&D intensity companies and companies that operate in an oligopolistic competition environment. Nor does it change in the fourth quarter. As for SUE, specifications 2–5 show that the market underreaction to it is significantly lower for high R&D intensity companies, for loss-reporting companies and in the fourth quarter. Moreover, the results of specification 5 indicate that after aggregating all the dummy variables, the coefficient on SUE is negative (-2.38), meaning that for high R&D intensity companies that report losses in the fourth quarter the post-earnings announcement drift is negative. Taking into account loss-reporting companies that report losses in the fourth quarter *or* have high R&D expenses leads to zero post-earnings announcement drift.

Interestingly, Table 4 and Table 5 indicate that, contrary to the *immediate* market reaction documented in Table 3, the market *underreaction* to SURG does not depend on R&D intensity or industry concentration level. It is significantly higher for loss-reporting companies, possibly due to the lower reaction to *contemporaneous* SURG in these companies. As for SUE, the *immediate* and the *post* market reaction to SUE are lower for high R&D intensity companies, loss-reporting companies and in the fourth quarter. The lower *immediate* market reaction to SUE is not followed by a higher *post* reaction, possibly due to the relatively low earnings quality in those contexts, as discussed in Section 2. It might be the case that post-earnings announcement drift and *immediate* market reaction are lower for the same reasons. The relatively low earnings quality might be the reason for not finding post-earnings announcement drift in companies that report losses in the fourth quarter *or* have high R&D expenses.

(iv) Interaction Between SUE and SURG – Portfolio Analysis

Next, I focus on the interaction between SUE *and* SURG and its effect on stock returns. Panel A (Panel B) of Table 6 presents the market reaction to negative (positive) SUE and positive (negative) SURG. The object of the table is to use another method to test the investors' reaction to earnings surprises versus their reaction to revenue surprises, in different contexts of R&D intensity, industry concentration and fiscal quarter. As reported in Table 6, for the full sample and the fourth quarter, the market reacts more strongly to SUE than to SURG, SAR being negative (positive) when SUE is negative (positive), significant at the 1% level. For high R&D intensity companies and for industries with oligopolistic competition, negative SUE with positive SURG does not lead to significant negative SAR. However, when SUE is positive and SURG is negative, SAR is positive and significantly different from zero at the 1% level in high R&D intensity companies and in environments with oligopolistic competition.

Table 6
Market Reaction to Opposite Signs of Unexpected Earnings (SUE) and Unexpected Revenue (SURG)

	Full Sample	High R&D	Oligopolistic Competition	Fourth Quarter	High R&D and Oligopolistic Competition	High R&D and the Fourth Quarter	Oligopolistic Competition and the Fourth Quarter
Panel A: Size-Adjusted Returns (SAR) when SUE is Negative and SURG is Positive							
SAR (mean)	-0.22%**	-0.08%	-0.07%	-0.18%**	0.07%	-0.15%	0.15%
t-statistic	-7.01	-1.01	-0.77	-2.85	0.27	-0.89	0.82
N	57,841	12,155	6,898	14,534	1,223	3,101	1,755
Panel B: Size-Adjusted Returns (SAR) when SUE is Positive and SURG is Negative							
SAR (mean)	0.94%**	0.59%**	0.90%**	1.02%**	0.56%	0.32%	0.88%**
t-statistic	26.51	6.03	8.61	14.28	1.70	1.62	4.20
N	47,397	8,914	5,661	11,529	907	2,236	1,372

Notes:

¹ This table presents the market reaction to opposite signs of unexpected earnings (SUE) and unexpected revenue (SURG).

² High R&D intensity companies are companies with R&D to revenues ratio higher than 5%.

³ Oligopolistic competition – where the *Herfindahl-Hirschman Index* is between 4,000 and 6,000.

⁴ Variable definitions:

- SAR – size-adjusted returns – raw returns minus the return on the portfolio of all companies in the same size decile. The return window contains the 4 trading days from -2 through +1, where 0 is the earnings announcement date, as stated in Compustat.
 - SUE – standardized unexpected earnings – quarterly earnings per share minus earnings per share in the same quarter of the previous year minus a drift, scaled by the standard deviation of earnings in the prior 8 quarters.
 - SURG – standardized unexpected revenue – similar to SUE but using revenue per share.
- *, ** – significantly different from zero at the 0.05 and 0.01 level, respectively.

A combination of several specifications shows that, in high R&D intensity companies that operate in environments of oligopolistic competition or in the fourth quarter, SUE does not dominate SURG. In these kinds of combinations negative (positive) SUE with positive (negative) SURG does not lead to significant negative (positive) SAR.¹⁴ These results confirm the results of Table 3 that the domination of earnings over revenues with respect to market reaction diminishes significantly in high R&D intensity companies, under oligopolistic competition and in the fourth fiscal quarter.

5. CONCLUDING REMARKS

This study focuses on the market reaction to revenue and earnings surprises according to the company being analyzed and the industry in which the company operates. My aim is to show that the influence of earnings and revenue surprises on stock returns depends on R&D intensity, fiscal quarter and industry concentration level.

I find that, in high R&D intensity companies, the effect of earnings surprises (revenue surprises) on stock returns is lower (higher) than in low R&D intensity companies. This is due to low earnings precision, and the requirement for an indicator of future outcomes, previous studies having indicated that revenues serve as a suitable indicator of earnings' persistence and future performance. I also find that the market reaction to earnings surprises is significantly lower in the fourth fiscal quarter compared to the first three quarters, because of high earnings management and discretionary write-offs in the fourth quarter. Turning to industry concentration, the influence of revenue surprises on stock returns is shown to be higher when the industry is ruled by two to three dominant companies in an environment of oligopolistic competition. In industries with oligopolistic competition, market-share strategy is important, because a larger market share yields the ability to influence future economic parameters in the market. For the same reason, the market reaction to revenue surprises is weaker when the market structure is close to perfect competition. When concentration is low, increasing market share is negligible and does not result in a marked change in competitive ability. As for the underreaction to earnings and revenue surprises that has been documented in previous studies, I find that the market underreaction to earnings surprises is lower in R&D-intensive companies, in the fourth quarter and in companies with losses.

Previous studies argue that in the full sample the information content of earnings in determining stock returns is higher than the information content of revenues. However, in this study I indicate that in R&D-intensive companies, in the fourth quarter and in industries with oligopolistic competition, the market reaction to earnings surprises is not necessarily higher than the reaction to revenue surprises. In comparing the influence of earnings and revenues on stock returns, I also find that negative earnings surprises accompanied by positive revenue surprises lead to negative abnormal return in the full sample, but do not lead to negative abnormal return in industries with oligopolistic competition, or for high R&D intensity companies. Overall this study highlights the importance of contextual analysis and shows that the market reaction to earnings and revenue surprises depends on the R&D intensity, fiscal quarter and

¹⁴ Note that for high R&D intensity companies operating under oligopolistic competition, the sample contains only about 1,000 observations.

industry concentration level. It also provides useful information for financial statement users in interpreting earnings and revenues.

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