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When Dividends Speak: A Comparative Study of How Tech and Industrial Markets Listen Differently

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Abstract

This thesis explores differing impacts of dividend signaling theory on U.S. firms' stock prices in the technological and industrial sectors from 2010–2020. It examines abnormal returns around dividend initiations and omissions across various event windows, to assess short- and long-term market reactions. Results show that, in the tech sector, dividend initiations yield positive abnormal returns, while omissions have negative effects. Comparatively, in the industrial sector, omissions produce stronger negative reactions, whereas announcements show minimal impact, consistent with the Efficient Market Hypothesis. These cross-sectoral differences arise from contrasting investor profiles, and contribute with valuable insights to investors, managers, and policymakers.

Keywords: Event Study, Comparative Analysis, Technological Sector, Industrials Sector, Dividend Policy

I. Introduction

In 1973, Princeton economics professor Burton G. Malkiel pioneered the concept of strong form market efficiency, in “A Random Walk Down Wall Street”, which complemented the Efficient Markets Hypothesis previously derived by Eugene Fama. The strong form of Efficient Markets Hypothesis asserts that all publicly and privately available information is fully reflected in an asset’s market price (Finnerty 1976). This implies that even insider information should be irrelevant and uncorrelated with abnormal stock returns. In this line of thought, Modigliani and Miller (1961) proposed the widely known theorem on the irrelevancy of financial structure, which implicitly assumes that the market possesses full information about the activities of a firm, and that in a perfect world with no taxes or bankruptcy cost, the dividend policy is irrelevant for determining a company’s stock price. However, in practice, the stock market operates as a complex mechanism, where asymmetric information and signaling play a pivotal role in shaping – often irrational - investor behavior and, consequently, asset pricing. One of the numerous financial theories that aims to explain market behavior is the dividend signaling theory. This theory primarily challenges the strong form of the Efficient Market Hypothesis, as it suggests that firms (and managers) use dividend announcements, to convey private information regarding expected earnings and future prospects to the market (Bhattacharya 1979). This implies the existence of asymmetric information between insiders and outside investors, which can in turn cause abnormal stock returns. Yet, although dividend signaling theory weakens the strong form of Efficient Market Hypothesis, it does not necessarily refute it, in case the market rapidly adjusts to the information conveyed by dividend announcements or omissions.

The practical impact of dividend signaling theory on stock pricing remains distinct across different sectors, and is influenced by industry-specific differences in growth dynamics, capital structure requirements, and investor sentiment. This thesis’ analysis is built upon the recognition that dividend signals are not universally interpreted by investors. The technological and industrial sectors provide a unique contrast for studying this effect. On the one hand, firms in the technological

sector are characterized by rapid growth and innovation, where retaining earnings – as opposed to paying out dividends – can signal confidence in the company’s ability to generate future returns from re-investment. As suggested by Chen and Chuang (2009), firms with good streams of investments, which have strong incentives to retain cash for enhanced competitive positions often are not penalized by the market for omitting dividends. This causes high-growth tech firms to often present nonlinear dividend policy flows, in comparison to other industries (Barros et al. 2023). On the other hand, firms in the industrial sector, associated to traditional manufacturing and infrastructure, are rooted in capital-intensive operations and can predict stable future cash-flows, using dividends as a sign of continuous profitability and mature market positioning. As detected by Reddy and Rath (2005), often dividend-paying industrial firms are more competitive, stable and profitable than non-paying industrials.

Although these impacts have been studied independently, and for several geographies, there seems to be little existing research on industry comparative studies. The technological sector has flourished in recent years, and the contribution to the S&P 500 total return by Information Technology companies paying dividends has risen from 9.07% in 2009 to 16.33% in 2019 (S&P 2020). At the same time, the industrial sector has a notable impact on the overall US economy, accounting for nearly 20% of the country’s GDP, with manufacturing alone accounting for 11% of US’s GDP (U.S. Bureau of Economic Analysis 2022). Moreover, this sector is still predominant in emerging economies, adding to the relevance of the present comparison.

Additionally, according to research from S&P Dow Jones Indices (2023), dividends have contributed to 32% of the total return for the S&P 500 since 1926, which makes dividend policy a pivotal component of the stock market. Last but not least, the technological and industrial sectors essentially represent different stages of industry maturity and stability, which offers a great opportunity to compare how dividend policies mature as industries do so as well.

Hence, given the size and impact of these two sectors, as well as their structural differences, and little existing comparative research, this thesis’ research question arises:

**To what extent is the impact of dividend signaling theory on stock market returns
distinct across the technological and industrial sectors?**

This research question leads to four main hypotheses. The null hypothesis ($H0$) proposes that dividend signaling (announcements and omissions) has no significant impact on neither tech nor industrials' firms stock prices. The first alternative hypothesis ($H1$) proposes that only dividend announcements have a statistically significant positive impact on stock prices, with industrial companies presenting bigger magnitude in cumulative abnormal stock returns than tech companies. The second alternative hypothesis ($H2$) proposes that only dividend omissions have a statistically significant negative impact on stock prices, with industrial companies presenting bigger magnitude in cumulative abnormal stock returns than tech companies. The third and last hypothesis ($H3$) arises as a combination of $H1$ and $H2$, and supports dividend signaling theory by proposing that both dividend announcements and omissions have a statistically significant impact on stock prices, with industrial companies presenting greater positive or negative cumulative abnormal stock returns, respectively, than tech companies.

These hypotheses stem from understanding that investors may interpret dividend signaling differently, depending on sector characteristics, rather than on a universal model. All three alternative hypotheses expect investors to be more reactive to dividend signaling for firms within the industrial sector, given the traditional cash flow stability of the industry. Given the more linear dividend policy flow associated with construction and manufacturing firms, investors may read dividend announcements as a very strong indicator of future financial performance of the companies, whereas dividend omissions are interpreted as a strong sign of financial trouble that is not necessarily tied to innovation and earnings re-investment. This is mainly due to a more income-focused and risk-averse investor base. Contrastingly, tech stocks investors are characterized for being growth focused, and for preferring reinvestments in research & development (R&D) and expansion over payouts. This is in line with their objectives for long-term capital gains, and matches the expectations of a more risk-tolerant investor base. Consequently, reactions to dividend policy changes are less

linear and can lead to mixed signals, as dividend signaling does not necessarily reflect the current and future financial health of the companies.

By conducting an event study methodology, this research presents a comparative analysis of the impact of dividend announcements and omissions across publicly listed US firms, that are representative of each sector. Namely, this thesis will investigate the statistical significance, direction, and magnitude of abnormal returns around dividend announcement and omission dates for dividend-paying US firms in the technological and industrial sectors, during the period of 2010-2020.

This introductory section is followed by a theoretical framework, aimed at discussing existing literature and re-highlighting the scientific relevance of this paper. Subsequently, the methodology section lays out how the statistical analysis is carried out, through an event study, which is followed by a chapter that explains the data collection and interprets the statistical results of the study. Lastly, a concluding section will summarize the key findings, discuss their implications, and highlight recommendations for further research on the topic.

II. Literature Review

i. Overview of Dividend Signaling Theory

As previously introduced, the dividend signaling theory supports that companies use dividend policy to communicate to the market private information regarding expected earnings and future prospects. For clarity, in the present thesis, a dividend announcement or initiation is defined as the first cash payment to shareholders reported by a company. A dividend omission is hereby defined as a dividend that was scheduled to be declared but is not distributed, due to a non-vote by the Board of Directors of a company. Detailed definitions will be provided further on, when describing data collection and sample selection.

In literature, it has primarily been shown by Battacharya (1979) that dividends function as a signal of expected cash-flows, assuming that investors have asymmetric information about firms'

profitability and that cash dividends are taxed at a higher rate than capital gains. Subsequent authors John and Williams (1985) follow up on this theory and identified a signaling equilibrium with taxable dividends, where insiders that pose of more valuable private corporate information optimally distribute larger dividends and, in turn, receive abnormal returns on their stock. Similarly, Miller and Rock (1985) extend existing research by allowing the imperfect information assumption that managers know more than outside investors about the true state of a company's current cash-flows. They support signaling equilibrium and conclude that dividends are sensible signals for conveying good news about the future earnings of a firm, even after taking into account the indirect costs of signaling – measured as an opportunity cost to managers. The authors also present no support for a policy of sustaining dividends in time of “bad news”, suggesting that dividend omissions will in turn be read as a bad signal for investors. In more recent papers, such as that of Taleb (2019), literature on dividend signaling theory has been revisited and it follows that most existing frameworks are based on intuitive rationale.

Contradicting papers, such as those of Watts (1973), Gonedes (1978), and Penman (1983) show that, in general, dividends convey very little information on future earnings forecast. Allen and Michaely (2003), also introduce the idea that “The post-dividend announcement drift is both encouraging and disturbing from the signaling-theory perspective. It is encouraging because it is consistent with the implication that dividend changes have some useful informational content. It is disturbing because it implies that even if firms try to signal through dividends, the market does not “get it””(389).

It is clear from existing literature that empirical evidence does not always allow to fully validate these theoretical models, and that the reaction of the stock markets to dividend signaling is not universal, nor always symmetrical. For this reason, dividend policy and signaling remains a relevant topic of investigation in modern finance.

ii. Empirical Evidence on Dividend Initiations

As previously touched upon, there is available literature that attempted to study the impact of dividend announcements on stock returns. These theoretical papers listed above have been empirically supported by the works of several researchers, including Pettit (1972), Asquith and Mullins (1983), Michaely et al. (1994), and Chaabouni (2017). Pettit (1972) was one of the pioneering authors in studying the effect of announcing a dividend distribution, and concluded - based on 1967-1969 data - that dividend announcements provide useful information which translates into a positive market reaction to a dividend increase, and into a negative market reaction to a dividend decline. The author supported his initial results later in 1976 (Pettit 1976), by conducting a regression analysis based on a sample of 634 firms during 4 years, and added that the informational relevance of dividend news is significantly greater than that of profits. Asquith and Mullins (1983) focus on extreme cases, similar to the ones employed in this thesis, and studied the impact of dividend initiation on a sample of 168 firms during 16 years, using an event study methodology. The authors found a significant 4.7% abnormal return over the two days after an announcement, and added that the abnormal returns were positively correlated to the size of the initial dividend.

In the work of Michaely et al. (1994), the authors study in detail price reactions to dividend initiations and omissions, and explore the concepts of market drifts and overreaction. Key findings of this study summarize that there are significant excess returns in the years following the announcement of a dividend initiation, and that the short-run price impact on prices is greater for omissions than initiations. The authors also state that, surprisingly, they found long-term drifts to be significant, which refutes the perspective of efficient markets, and disagrees with the market overreaction hypothesis. Last but not least, the authors also reject the idea of clientele effect, concluding that there is no significant evidence of changes in prices due to changes in the type of shareholders that own company stock.

Contrarily to the previous authors, Gunasekarage and Power (2006) present anomalous evidence to the dividend announcement effect. Based on data from UK companies, the authors empirically

conclude that managerial decisions to change dividend policy actually relate to past and present financial performance of firms, rather than their future expectations. Additionally, although the authors partially agree with existing research, in that there seems to be an effect of increased and decreased dividends and earnings announcements on security pricing in the short-term, they also argue that this effect is merely an overreaction of the market, which then will present no long-term effect.

More recently, Chaabouni (2017) revisited the existing theory and has investigated the stock prices response to dividend announcements of 10 publicly listed companies in Saudi Arabia through an event study, and concluded that abnormal returns and cumulative abnormal returns were significantly positive in the 20 days surrounding dividend announcement days, confirming once again the intuition behind this thesis in other geographies.

iii. Empirical Evidence on Dividend Omissions

As with initiations, some literature has focused more on the effects of dividend omissions on stock prices. Authors who have studied this effect in more detail include Healy and Palepu (1988), Ghosh and Woolridge (1988), Michaely et al. (1994), and Bulan et al. (2007).

The findings of Healy and Palepu (1988) regarding dividend announcements are in line with what the dividend signaling theory predicts, as well as with the conclusions of most of the existing literature. However, for their sample of 172 firms that omitted dividend payments, the findings go against what this same theory predicts. The authors found that, in the short-term, earnings and stock prices declined after the omission announcement took place, but then improved significantly in the upcoming years. Around the same time, Ghosh and Woolridge (1988) employed a multiple regression model to identify the key components determining the stock loss suffered by shareholders after a dividend cut or omission. In line with previous research, the authors concluded that the short-term capital loss was significantly dependent on the percentage change in dividend payment (which is of 100% in the case of an omission), the size and risk of the company, and the price performance

of the firm in the period anticipating the dividend policy change. They further suggest that for firms whose managers reassure a growth-driven dividend reduction or omission, this effect is weaker and more likely tolerated by investors.

In line with this reasoning, Bulan et al. (2007) published a paper arguing that dividend omissions can actually be good news, often signaling a financial turnaround after periods of poor performance. The authors describe some dividend omissions as “bitter medicine” necessary to heal records of poor past performance, concluding that 35% of dividend omissions are good news. However, they also recognize that the market often has trouble identifying good and bad omitters, although these can be empirically identifiable. Results of the study suggest that good omissions come from profitable companies as a means to utilize spare cash to reduce low debt overhang, while bad omitters often have a persistent record of debt overhang and continue to perform poorly in the periods following a dividend policy change. Additionally, the authors found that omissions are more likely to be good news in disguise when market sentiment is high, which leads to a bigger penalty in stock prices in the short term after an absence in dividend payments.

In contrast, and as previously touched upon, the work of Michaely et al. (1994) confirms that firms omitting dividends perform quite poorly in the period anticipating the news, and experience an additional excess return of -7.0% in the three days around the event date. The research adds that the more pronounced price reaction to omissions can indicate that negative changes have more informative content on the company future prospects. However, the authors also recognize that this proportionality is tied to the size of the change in dividend, and investigate that when a “stale” price is used as current yield, there is no significant asymmetry between the market reactions to omissions and initiations.

The contradicting evidence that exists in literature suggests that this effect is not certain, and that the price reactions to dividend policy cuts depend on multiple other factors, including industry, capital structure, firm past performance, as well as the time period considered for analysis – due to the significant difference between short-term versus long-term effects.

iv. Cross-sectoral differences in investor sentiment: Tech vs Industrials

The following sub-section explores the main cross-sectoral differences and existing evidence on investor sentiment between the technological and industrials sectors. For clarification, the technological sector is hereby defined as a set of publicly-listed firms that operate in the research, development and/or distribution of technologically based goods and services (Investopedia 2022). The industrials sector refers to a set of companies that manufacture, produce and distribute goods and services, as defined by Nasdaq (2024). Subsectors of industrials include aerospace, construction, defense, manufacturing, machinery, and logistics.

These contrasting sectors provide a unique lense through which dividend policy can be studied and compared, given their structural differences and contrasting investor bases. In the book “Tech Stock Valuation: Investor Psychology and Economic Analysis” (Hirschey 2003), the author delves into investor psychology and concluded that investor sentiment plays a significant role in tech stock valuation. The irrationality inherent in this type of investor, including the phenomena of herd mentality and confirmation bias, often leads to market movements that do not always align with fundamental financial analysis. Even in 2003, the author already identified that tech stocks were showing a tendency of rapid-growth movements and valuation increases, often outperforming the market in the “Dot-com Bubble”. Given the specificities of tech investors, the dividend policy change effect has been particularly explored in this sector. Authors Lacina and Zhang (2008) studied the stock price and trading volume reactions to dividend initiations by high-tech firms, comparatively to those by non-high-tech firms. The authors empirically conclude that stock returns and trading volume surrounding dividend initiation dates are greater for high-tech firms than for non-high-tech firms, and that this effect is accentuated for firms with greater liquidity.

The recent study of Wansley et al. (2024) also found a modest correlation between dividend yield and Information Technology firms’ valuation, which supports the aforementioned dividend signaling theory. However, the researchers also conclude that the lack of statistical significance in the results suggests that other factors, such as the prioritization of reinvestment for innovation and

growth, are likely to play a more pivotal role in firm valuation than dividend policy. The results of this study also challenge the “bird in the hand theory”, explored by Bhattacharya (1979), which posits that investors value dividends more highly than retained earnings due to the certainty and liquidity of cash flows. In the particular case of the technological sector, the investor’s risk-tolerant profile leads to a higher valuation of growth opportunities than cash returns in hand.

These results seem to contrast with comparable studies conducted for firms in the industrials sector. The work of Baker and Weigand (2015) analyzes literature surveys on dividend policy to generally conclude that universal dividend policy theories are too simplistic to be applied to all firms and sectors. The authors indicate, based on US evidence, that the relevance of cash dividends as a share of shareholders total return has declined over time.

A study conducted by Nugraha et al. (2020) employs data from 15 Indonesian firms in the manufacturing sector, for the period 2014 to 2018, to conclude that companies that distribute its profits to shareholders in the form of dividends will see an increase in firm value. Similarly, the work of Davydenko and Charith (2021) model data from manufacturing companies listed on the Colombo Stock Exchange (CSE), from Sri Lanka, in a regression analysis, to validate that cash dividends do work as a stimulus to investors, supported by the positive relationship between dividends per share and market price per share. In general, the authors corroborate the dividend signaling theory by concluding that dividends possess informational value about a company’s future prospects. Similar conclusions were attained by Anwar et al. (2017) with evidence from Indian manufacturing companies, and by Zakaria et al. (2012) with evidence from Malaysian construction and material companies.

This effect seems to be relevant and sufficiently explored in emerging markets, where the industrial sector plays a pivotal role in development. However, updated research on US construction and manufacturing firms’ dividend policy seems to be more limited, as cash dividend payments decline over time (Adaoğlu 2008).

Broadly speaking, these two sectors display contrasting investor bases, mainly regarding their risk appetite, growth expectations, dividend focus, and investment horizon. Tech investors are often characterized as more risk-tolerant, growth-oriented, with little dividend focus, and driven by shorter-term gains that come with rapid technological change. Contrastingly, investors that trade industrials stocks have a lower risk-tolerance, are more income-oriented, value cash-flows stability, and often have a longer-term investment horizon. For this reason, a comparative analysis on the reactions of these investor bases to dividend policy changes becomes relevant to inform investors on how different markets are expected to react to financial shifts.

Additionally, a notable gap in literature is that most empirical on traditional dividend policies is outdated and has not been revisited, especially considering US firms. Moreover, given the ongoing structural changes in the relevant sectors and growing trends on both realms, a comparative analysis becomes increasingly relevant. The present thesis aims to close this comparative analysis gap in literature, and to inform managers as well as investors, on the likely market reactions to corporate policy changes.

III. Data Collection

For the purposes of this thesis, daily stock price data was collected for companies in the technological and industrial sectors over the period from 2010 to 2020. The data was retrieved from the Bloomberg Terminal under the option “PX_LAST”, which represents the last traded price of a security at the end of a trading session. Data was collected for each trading day within the above-mentioned timeframe.

The dataset includes only companies that either announced or omitted dividends during the 2010-2020 period. To determine whether and when a company announced or omitted dividends, information was gathered from the company’s investor relations page and the dividend history page on the NASDAQ platform. Each company’s stock price data was aligned with the announcement or omission dates to enable event-study methodology.

For the technological sector, data was collected from 22 companies - 19 dividend announcements and 3 dividend omissions - all of which are part of either the S&P 500 Information Technology Sector or the NASDAQ 100. For the industrial sector, data was collected from 13 companies - 11 dividend announcements and 2 dividend omissions - within the S&P 500 Industrials Sector.

The dataset is structured to align with the Fama-French 3-Factor Model, which assumes that stock returns are driven by three factors: Market Return (MKT), representing the excess return of the market portfolio over the risk-free rate, Small Minus Big (SMB), measuring the size effect by capturing the return difference between small-cap and large-cap firms, and High Minus Low (HML), reflecting the value effect through the return difference between high and low book-to-market stocks. This model is further described in the section below. This data, which reflects the performance of the aggregate US equity market, provides a representation of the value-weighted return of all companies included in the Center for Research in Security Prices (CRSP). These companies are incorporated in the US and are listed on major exchanges such as the New York Stock Exchange (NYSE), American Stock Exchange (AMEX) and NASDAQ.

IV. Methodology

i. Introduction to Event Study

As previously employed by other authors, the present thesis will investigate the research question by means of an event study. The works of Asquith and Mullins (1983), Michaely et al. (1994), and Chaabouni (2017) follow a very similar methodology to the one employed here – an event study technique. As highlighted by MacKinlay (1997), event study is a statistical technique often applied in the fields of accounting and finance, to numerous firm specific and economic wide events. In its essence, an event study measures the impact of a specific event in another variable – often the value of a firm – during a specified event window. In the present methodology, the analysis will follow a similar flow to that described by MacKinlay (1997).

Here, for each individual firm, the event of interest is the dividend initiation or omission date, defined as $t=0$. Given the set of numerous firms, the event dates will be different for each individual observation, as described in the previous section. The event window is defined as the time period over which the share prices of the firms will be analyzed. We hereby analyze various event windows, to allow for a more comprehensive analysis of the days surrounding the event in both sectors. It is relevant to analyze the price effects that occur prior, during, and shortly after the dividend policy news in order to capture a possible pre-event reaction, as well as corrections for a likely over- or under-reaction by the market. In the present study, the following event windows are considered: [-10, 10], [-3, 3], [-2, 2], [-1, 2], [0, 3]. Negative lower bounds indicate t days prior to the event date, and positive upper bounds indicate t days after the event date. Moreover, a 110 days estimation period is used in order to estimate normal return parameters, which does not intersect the event windows. During this period, a model is employed to measure normal performance of each group of securities.

ii. Measuring Normal Returns

A variety of models is available to estimate normal returns, including statistical and economic models. This paper uses the widely-known economic model 3-Fama French Model, which allows to calculate more precise measures of the returns, using economic restrictions related to investor behavior (MacKinlay 1997). Fama and French (1993) proposed a multifactor asset pricing model that is often employed as an improvement of the CAPM model, as it tackles average-return anomalies present in CAPM (Fama & French 1996). The model states that the expected return of an asset or portfolio in excess of the risk-free rate $[E(R_i) - R_f]$ is explained by the sensitivity of its return to three factors: (i) the excess return on a broad market portfolio $((R_M - R_f)$ or MKT); (ii) the difference between the return on a portfolio of small stocks and the return on a portfolio of large stocks (SMB, small minus big); and (iii) the difference between the return on a portfolio of high-book-to-market stocks and the return on a portfolio of low-book-to-market stocks (HML).

Following Fama and French (1993, 1996), normal returns of each firm's stock i , at time t are hereby calculated as follows:

$$E(R_{it}) - R_{ft} = b_i[E(RM_t) - R_{ft}] + s_iE(SMB_t) + h_iE(HML_t) \quad (1)$$

iii. Measuring Abnormal Returns

The previously defined market model is also used to estimate the expected rate of return for each asset during the event window period. Here, the number of expected returns calculated will depend on the event window under consideration (for an event window $[-10, 10]$, the returns will be calculated for 21 days – 10 days before the dividend announcement, the event date, and the 10 days following the announcement). In essence, in order to calculate abnormal returns, the actual returns of the stocks around the event date are compared to the expected returns of the stocks, according to the estimation model, for the respective period.

Firstly, actual returns R_{it} are calculated based on the closing stock prices of stock i , P_{it} and $P_{i,t-1}$, at times t and $t-1$, respectively.

$$R_{it} = \frac{P_{it} - P_{i,t-1}}{P_{i,t-1}} \quad (2)$$

Then, abnormal returns AR_{it} , for each firm's stock i , at time t are calculated as follows:

$$AR_{it} = R_{it} - E(R_{it}) \quad (3)$$

Since company stocks are analyzed in groups, two other figures are calculated for each group of stocks – daily average abnormal returns AAR_t , and cumulative average abnormal returns $CAAR$. These figures are respectively calculated as follows:

$$AAR_t = \frac{1}{N} \sum_{i=1}^N AR_{it} \quad (4)$$

$$CAAR = \sum_{t=LB}^{UB} AAR_t \quad (5)$$

where N refers to the number of securities with excess returns during each day t, in each group of assets, and CAAR are calculated for a period from t=LB (event window lower bound) until t=UB (event window upper bound) for each group of securities. Here, CAAR are calculated for technological firms' dividend initiations and omissions, and for industrials firms' dividend initiations and omissions, thus making it the main comparative figure in the analysis.

In order to conduct the analysis, the STATA *estudy* command was used, with all the specifications mentioned above. A detailed code description can be found in **Appendix A3**.

V. Analysis & Results

Following the methodology described above, the event study uses the cumulative average abnormal returns (CAAR) over various event windows to capture both short-term and extended pre- and post-event market responses, and summarizes the main statistical findings hereafter. The analysis' aggregate results are grouped into four categories within **Table 1**, as previously introduced. Individual results are fully disclosed in **Appendix B**, in **Tables B1, B2, B3** and **B4**, respectively.

Table 1. Event Study Statistical Results

	<i>CAAR [-10,10]</i>	<i>CAAR [-3,3]</i>	<i>CAAR [-2,2]</i>	<i>CAAR [-1,2]</i>	<i>CAAR [0,3]</i>
<i>Panel A: Technological Dividend Initiations</i>					
Group 1 (19 securities)	4.98%*** (0.0017)	2.56%*** (0.0050)	2.39%*** (0.0021)	1.92%*** (0.0054)	1.79%*** (0.0094)
<i>Panel B: Technological Dividend Omissions</i>					
Group 2 (3 securities)	-6.54%	-3.76%	-3.25%	-5.32%*** (0.0075)	-6.19%*** (0.0020)
<i>Panel C: Industrials Dividend Initiations</i>					
Group 3 (11 securities)	-0.71%	-1.37%	2.14%	-2.44%	-2.01%
<i>Panel D: Industrials Dividend Omissions</i>					
Group 4 (2 securities)	-7.14%	-12.44%*** (0.0000)	-11.20%*** (0.0000)	-13.25%*** (0.0000)	-14.85%*** (0.0000)

Notes: p-values of significant results are shown in parenthesis

* Indicates statistical significance at the 10% level (p-value<0.10); ** Indicates statistical significance at the 5% level (p-value<0.05); *** Indicates statistical significance at the 1% level (p-value<0.01)

The first group of securities, in **Panel A**, includes 19 dividend initiations, by firms within the technological sector. Event dates run from December 15th, 2010, with a dividend initiation by Broadcom Inc, until March 14th, 2019, with a dividend initiation by Verisk Analytics Inc. Based on the figures, some individual companies presented notably positive and significant abnormal returns, for all event windows surrounding the announcement date. This is the case for Intuit (INTU) and Symantec (GEN), which present highly significant positive abnormal returns for all event windows, which range from 8.38% to 11.96% and 8.58% to 11.75%, respectively, and that generally grow in magnitude as event windows become wider. As for the aggregate group, the CAAR are also shown to be positive and statistically significant at 1% significance level, for all the proposed event windows. The aggregate figures range from 1.79% to 4.98% of abnormal returns, and these results generally grow in magnitude as event windows become wider. These results strongly align with the dividend signaling theory and suggest that, in general, tech investors react positively to dividend initiation news.

The second group of securities includes 3 dividend omissions, by firms also classified within the technological sector for the period under analysis. We can conclude from the figures in **Panel B** that all individual and aggregate abnormal returns are on average negative in the periods surrounding the dividend omission news. Yet, only the results for shorter event windows, namely [-1,2] and [0,3], are negative and statistically significant. The abnormal returns are estimated as -5.32% and -6.29%, respectively, and suggest a quick market reaction, that does not persist for wider windows considering pre-event dates.

The third group analyzes 11 dividend initiations by firms classified as industrials. As seen in **Panel C**, although some individual firms present statistically significant results, the aggregate group results do not provide enough statistical evidence to reject the null hypothesis of no effect of dividend announcement news on stock prices. Given this, we cannot infer any effect of these events on stock prices of industrials firms. This primarily suggests that pre-announcement and post-

announcement stock prices already reflect all available information regarding future earnings, validating the Efficient Market Hypothesis.

The last and fourth group, in **Panel D**, analyzes the 2 sole dividend omissions that classified for industrials firms within the specified period. However, even with limited observations, the results show statistical significance of negative abnormal returns for individual securities and the aggregate group. The abnormal returns range from -11.20% to 14.85%, and the only statistically insignificant result is recorded for the broader event window [-10,10]. This suggests the existence of an accentuated post-omission drift that might be corrected in the extended period following an omission. Nevertheless, it is clear from the existing data that investors that hold industrials stocks are likely to react strongly against dividend omission news. This result aligns particularly with the type of expectations held by industrials investors, to be explored further.

These results are supported by the visual representations added in **Appendix C. Figure C1** shows the evolution of aggregate CAAR of technological stocks in the period surrounding the dividend initiation news. It can be seen from the graph that abnormal returns start evolving positively from approximately $t = -6$, suggesting investor optimism pre-announcement. The trend stays upward sloping until the end of the event window, which supports the idea that, for technological firms, dividend initiations are indeed sensible signals for conveying good news about a firm's prospects. **Figure C2**, which represents the evolution of aggregate CAAR of technological stocks in the period surrounding the dividend omissions news, depicts the opposite relationship. In fact, CAAR are negative for the whole 21-day period shown, however, given the model's statistical significance, one should only focus on a 5-day period surrounding the event. Here, one can observe a slight increase in CAAR immediately before the dividend omission, albeit still negative, and a more pronounced decrease immediately after, suggesting a negative reaction from the market to the news.

Figure C3, relating to dividend initiations of industrials firms, shows a trend of CAAR that are not statistically different than 0, meaning that no real impact can be assessed. As aforementioned, this suggests that the asset prices in these dates already reflected full information on current and

future earnings of the firms and, thus, suffered no significant impact from the dividend announcements. Lastly, **Figure C4**, which depicts the evolution of CAAR for the industrial firms that omitted dividends, shows an accentuated peak of positive abnormal returns in most pre-event days, and an even more accentuated drop in cumulative abnormal returns immediately before the news about an omission were released (around $t = -1$), which becomes increasingly negative thereafter. Given the present sample, one can detect a very strong and negative market reaction to the news, likely given the stability associated to this sector, and the type of information such a policy change conveys.

VI. Conclusion

i. Key findings

Based on the section above, this paper's key findings are summarized as follows: For firms in the technological sector, dividend initiations are associated with a positive evolution of CAAR, for a period of at least 21 days surrounding the event date. This supports the idea that dividend initiations convey optimistic information regarding tech firms' earnings forecasts and is in line with the findings of Pettit (1972) and Chaabouni (2017), who both validate the dividend signaling hypothesis, and Asquith and Muslims (1983), who found significant 4.7% abnormal returns over the two days after a dividend announcement. Conversely, for dividend omissions by technological firms, the market reaction is negative, shown by the negative evolution of CAAR in the 5 days surrounding the event date. The absolute value of abnormal returns is also greater for dividend omissions than initiations, which is supported by the conclusions of Michaely et al. (1995). These authors and others, such as Gunasekarage and Power (2006), Healy and Pepelu (1998), Ghosh and Woolridge (1998), and Bulan et al. (2007) also predict that although dividend omissions cause stock prices to decline in the short term, these are also likely to signal longer-term financial turnaround after consecutive periods of poor performance. The slightly positive trends towards the upper bound of the event window in **Figures C2** and **C4** can suggest an alignment with these findings.

For omissions in the industrials sector, the results follow the same direction, with negative CAAR results following event dates. However, one main difference can be identified: firstly, the bigger magnitude of negative abnormal returns post-omission strongly suggest that investors react more abruptly to changes in dividend policy within this sector, relative to tech stocks. This is likely caused by behavioral differences in investor profiles. Generally, an income-oriented investor will value dividends more highly than retained earnings due to the certainty of cash flows. Consequently, in the industrials sector, which is characterized by stable cash-flows and mature business models, dividend-paying industrial firms are perceived as more competitive, stable and profitable than firms who omit dividend payments. On the other hand, and as challenged by Bhattacharya (1979), the “Bird in the Hand Fallacy” validates that in the technological sector, an investor’s risk tolerant profile may lead to higher valuation of future capital gains from a firm’s earnings’ reinvestment – an idea later corroborated by Chen and Chuang (2009) – than dividend payouts. The present thesis proposes this as the main cause of cross-sectoral absolute differences in the market reactions to dividend omissions.

Lastly, the unexpected insignificant results for dividend initiations by industrials firms endorse the Efficient Market Hypothesis. Although these results were unanticipated by the intuition driving this thesis, a supportive argument for these results can be found in an idea stated by Guiso (1998). In a paper on high-tech firms and credit rationing, the author argues that the greater business complexity of high-tech firms can lead to more accentuated information asymmetry between insiders and investors, relative to firms in other sectors. This supports the conclusion that dividend initiations convey more relevant information for technological firms than for industrials firms. Thus, one can indeed expect dividend initiations to convey relevant signals to technological investors, who are otherwise likely uninformed by a firm’s earnings prospects. Comparatively, positive abnormal returns can be unattainable for industrials investors, since information is more symmetrically distributed and market prices already reflect all available information on future earnings.

These findings primarily reject the thesis' null hypothesis (H_0), as significant effects were found for most groups. The results fully validate the second alternative hypothesis (H_2), with dividend omissions causing a decrease in stock prices, and greater magnitude of negative CAAR for the group of industrial firms. The first alternative hypothesis (H_1) is partially validated, as only technological firms observed a positive impact on stock prices of dividend initiations.

ii. Theoretical and Practical Implications

These results pose several theoretical implications for literature. Firstly, the study enhances the understanding of how dividend signaling theory operates in practice. As suggested by authors like Baker and Weigand (2015), it is here highlighted that the dividend signaling theory cannot be simplistically and universally applied, varying greatly across sectors and geographies. Some of the unexpected results suggest that some more stable and predictable sectors, such as the industrial sector, are more likely to align with the Efficient Market Hypothesis, with dividend initiations having minimal impact on market reactions. Consequently, by proposing empirically different reactions to dividend news, this thesis supports the idea that asymmetric information and investor profiles notably mediate the overall stock price responses. This has been achieved by adding a cross-sectoral view to existing research. This new perspective also contributes to literature on behavioral finance, as the findings underscore the role of sector-specific investor sentiment and behavioral biases, building upon what authors like Hirschey (2003) and Nofsinger (2017) proposed in their works, and opening the door to further investigation on investor biases.

Regarding practical implications, this paper offers valuable insights to several stakeholders. Firstly, it contributes to the refinement of investment strategies, as investors can better understand the expected reactions of the overall market to sector-specific news. For instance, financial advisors and asset managers can incorporate these empirical insights into portfolio diversification strategies that align with specific investor profiles. This work also presents useful information for managers and corporate communication. It indicates to managers in the technological sector that dividend

initiations should be leveraged strategically, and that dividend omissions should be communicated alongside reinvestment plans, in order to signal maturity and profitability without risking major negative reactions tied to unintended signals about slowed growth. For managers of industrial firms, findings suggest that companies should maintain consistent dividend payment schedules, and, when necessary, accompany dividend cuts and/or omissions with a clarification about the firm's financial health, so that abrupt falls in stock prices can be avoided. Last but not least, this paper also leads one to consider the relative relevance of dividend signaling in emerging markets, where the construction and manufacturing sectors play a pivotal economic role. Amidst higher information asymmetry due to lower transparency and relatively immature governance structures, dividend policies play a pivotal role in signaling financial health, as seen in the papers of Zakaria et al. (2012), Anwar et al. (2017), Nugraha et al. (2020), and Davydenko and Charith (2021). The insights obtained, particularly for the market reactions of industrials dividend omissions, suggest that policymakers in these economies should carefully balance dividend cuts and promote robust disclosure practices in order to attract and retain investors.

This simultaneous focus on theoretical and practical relevance makes this thesis a valuable contribution to financial literature, as well as a useful resource for corporate stakeholders, including managers and investors across various economic sectors and settings.

iii. Strengths and limitations of the project

The strengths of this paper lie in its straightforward empirical design and theoretical alignment, particularly with the frameworks of Dividend Signaling Theory and Efficient Market Hypothesis (EMH). The study also provides clear and significant empirical evidence that supports knowledge of sector-specific investor behavior, enhancing the work's academic preciseness and practical relevance. Moreover, the event study methodology employed using multiple event windows enables a nuanced and more comprehensive analysis of market behavior at different points in time, successfully capturing potential market over- or underreactions to dividend signals.

Furthermore, the use of a more complete model for the calculation of normal returns than the traditional Market Return or even CAPM, which controls for economic factors beyond excess market returns, adds sophistication and reduces potential biases in the analysis. The use of an aggregate market model to calculate normal stock performance also allows for the fairest possible comparison ground between the two sectors. If sector-specific indices had been used, rather than measures for the aggregate US market, the results could be biased depending on the sector-specific competitive position of each firm. For instance, normal returns of a high-tech firm that outperformed excess market returns but is below the tech-specific excess market returns, would be negatively biased against the normal returns of a manufacturing firm which outperformed the industrials sector but remains below the average aggregate market excess returns.

Regarding limitations of the research, the primary one is related to the limited availability of data for dividend omissions in both sectors within the US. This reduces robustness of results, comparatively to the initiations data in both sectors. Secondly, Initiations and omissions occurred during a broad period of time (around 11 years), which captured different economic landscapes. Although the 3-Factor Fama French model is prepared to deal with some of the CAPM anomalies, it may still omit relevant economic measures that play a relevant role in defining asset pricing. Hence, selecting a shorter period and/or controlling for additional variables could marginally increase the quality of the model.

iv. Recommendations for further research

Although this thesis successfully achieved relevant results, there is always room for improvement and research extension. In closing, the following section is dedicated to suggestions for further research on this topic. The first suggestion proposes a more comprehensive analysis of other market factors such as trade volume, stock price volatility, and longer-term profitability. An extended approach would likely enable deeper insights into how dividend announcements and omissions influence stock market behavior. Analyzing trade volume, for one, could measure the

intensity of investor reaction to the news, with high trading volumes indicating strong market reactions and signal credibility, and muted volume changes reflecting investor indifference and skepticism. Stock price volatility analysis would be particularly relevant in a more comprehensive cross-sectoral analysis, as changes in volatility relate to the riskiness associated with a firm's stock. Such investigation could help better identifying the principles of market overreaction and underreaction drifts. The idea of introducing longer-term profitability into the analysis could clarify the existence of a long-term signaling equilibrium, and if dividend initiations genuinely signal financial maturity or are mostly used as short-term strategies to appease shareholders. An approach that explores the interaction of such terms would likely increase robustness of these findings.

Additionally, in an attempt to recognize other possible sources of abnormal returns around dividend announcement dates, it can be relevant to control for firm-specific events, or managerial reputation, when assessing dividend signaling effects.

Slight variations of the current work can also introduce new degrees of analysis, such as assessing the impact of different levels of dividend policy changes, such as done by Pettit (1972), who analyzed dividend quarterly changes in mutually exclusive classes: “omissions, reductions, no changes, less than 10 percent increases, 10 to less than 25 percent increases, 25 percent increases and greater, and initial payments” (1998). Inspired by the works of Penman (1983) and Pettit (1976), it would also be interesting to introduce an interaction term between dividend and earnings announcements to assess how these two information sources impact both sectors differently.

An alternative approach to the present research, that poses of the same novelty, would be to compare even more contrasting investor bases – for instance, tech versus utilities investors. In fact, this was the initial intention of the present paper, which had to be foregone due to limited data availability over the relevant period of time. The intuition is that this analysis would gain relevance if performed for an even more stable and predictable sector.

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Appendix A – Additional Notes on Data Collection and Methodology

Table A1. Technological Companies Signaling Information

Ticker	Company Name	Event Type	Event Date	Source
AAPL	Apple Inc	Initiation	27 Jul 2012	Firm's Investor Relations
AVGO	Broadcom Inc	Initiation	15 Dec 2010	Annual Report 2010
CDW	CDW Corporation	Initiation	13 Feb 2014	Annual Report 2013
CSCO	Cisco Systems Inc	Initiation	17 Mar 2011	Firm's Investor Relations
CTSH	Cognizant Technology Solutions	Initiation	05 May 2017	Annual Report 2017
GEN	Gen Digital Inc	Initiation	30 Jul 2013	Nasdaq Dividend History
HPE	Hewlett Packard Enterprise	Initiation	12 Nov 2015	Firm's Investor Relations
INTU	Intuit Inc	Initiation	18 Aug 2011	Firm's Investor Relations
JNPR	Juniper Networks Inc	Initiation	22 Jul 2014	Nasdaq Dividend History
LRCX	Lam Research Corporation	Initiation	28 Apr 2014	Firm's Investor Relations
MRVL	Marvell Technology Inc	Initiation	17 May 2012	Firm's Investor Relations
MSI	Motorola Solutions Inc	Initiation	28 Jul 2011	Firm's Investor Relations
NTAP	NetApp Inc	Initiation	21 May 2013	Nasdaq Dividend History
NVDA	NVIDIA Corp	Initiation	08 Aug 2013	Nasdaq Dividend History
NXP	NXP Semiconductors NV	Initiation	29 Aug 2018	Nasdaq Dividend History
STX	Seagate Technology Holdings PLC	Initiation	02 May 2011	Firm's Investor Relations
SWKS	Skyworks Solutions Inc	Initiation	22 Apr 2014	Firm's Investor Relations
TER	Teradyne Inc	Initiation	22 Jan 2014	Nasdaq Dividend History
VRSK	Verisk Analytics Inc	Initiation	14 Mar 2019	Firm's Investor Relations
FICO	Fair Isaac Corp	Omission	17 May 2017	Annual Report 2017
MPWR	Monolithic Power Systems Inc	Omission	17 Apr 2013	Annual Report 2012
WDC	Western Digital Corp	Omission	30 Apr 2020	Annual Report 2020

Table A2. Industrials Companies Signaling Information

Ticker	Company Name	Event Type	Event Date	Source
ALLE	Allegion PLC	Initiation	11 Feb 2014	Firm's Investor Relations
CARR	Carrier Global Corp	Initiation	10 Jun 2020	Nasdaq Dividend History
DAL	Delta Air Lines Inc	Initiation	08 May 2013	Nasdaq Dividend History
FTV	Fortive Corp	Initiation	04 Aug 2016	Firm's Investor Relations
HII	Huntington Ingalls Industries Inc	Initiation	08 Nov 2012	Nasdaq Dividend History
J	Jacobs Solutions Inc	Initiation	19 Jan 2017	Nasdaq Dividend History
LDOS	Leidos Holdings Inc	Initiation	20 Mar 2012	Firm's Investor Relations
ODFL	Old Dominion Freight Line Inc	Initiation	25 Jan 2017	Nasdaq Dividend History
OTIS	Otis Worldwide Corp	Initiation	06 May 2020	Nasdaq Dividend History
PWR	Quanta Services Inc	Initiation	07 Dec 2018	Nasdaq Dividend History
XYL	Xylem Inc	Initiation	02 Nov 2011	Nasdaq Dividend History
GNRC	Generac Holdings Inc	Omission	10 Jun 2013	Nasdaq Dividend History
LUV	Southwest Airlines Co	Omission	27 Mar 2013	Firm's Investor Relations

Note: Dividend information sources are fully referenced in the bibliography section.

A3. STATA Commands

For technological sector event date:

```
estudy APPL AVGO CDW CSCO CTSH GEN HPE INTU JNPR LRCX MRVL MSI NTAP NVDA  
NXP STX SWKS TER VRSK (FICO MPWR WDC), datevar(Date) evdate(Stock_name_tech  
Event_date_tech) dateformat(DMY) lb1(-10) ub1(10) lb2(-3) ub2(3) lb3(-2) ub3(2) lb4(-1) ub4(2)  
lb5(0) ub5(3) eswlb(-120) eswub(-10) indexlist(MKT SMB HML) modtype(MFM) showpv graph (-  
10 10)
```

For industrials sector event date:

```
estudy ALLE CARR DAL FTV HII J LDOS ODFL OTIS PWR XYL (GNRC LUV), datevar(Date)  
evdate(Stock_name_ind Event_date_ind) dateformat(DMY) lb1(-10) ub1(10) lb2(-3) ub2(3) lb3(-  
2) ub3(2) lb4(-1) ub4(2) lb5(0) ub5(3) eswlb(-120) eswub(-10) indexlist(MKT SMB HML)  
modtype(MFM) showpv graph (-10 10)
```

Appendix B – Statistical Results

Table B1. Event Study on Tech Dividend Initiations

<i>Security</i>	<i>Event Date</i>	<i>CAAR [-10,10]</i>	<i>CAAR [-3,3]</i>	<i>CAAR [-2,2]</i>	<i>CAAR [-1,2]</i>	<i>CAAR [0,3]</i>
<i>AAPL</i>	27 Jul 2012	-7.95%	-7.26%** (0.0479)	-5.42%* (0.0798)	-4.88%* (0.0777)	-6.40%** (0.0215)
<i>AVGO</i>	15 Dec 2010	6.31%	3.26%	5.33%	4.18%	4.15%
<i>CDW</i>	13 Feb 2014	10.23%	3.69%	4.51%	5.67%* (0.0702)	4.06%
<i>CSCO</i>	17 Mar 2011	-3.41%	-0.34%	-1.59%	-0.27%	0.71%
<i>CTSH</i>	05 May 2017	9.93%	5.02%	5.52%* (0.0748)	5.19%* (0.0610)	4.54%
<i>GEN</i>	30 Jul 2013	11.75%*** (0.0017)	8.58%*** (0.0001)	8.97%*** (0.0000)	9.05%*** (0.0000)	8.70%*** (0.0000)
<i>HPE</i>	12 Nov 2015	11.34%*** (0.0028)	3.56%** (0.0238)	0.43%	-1.17%	0.26%
<i>INTU</i>	18 Aug 2011	11.96%*** (0.0056)	9.42%*** (0.0002)	8.94%*** (0.0000)	8.38%*** (0.0000)	8.79%*** (0.0000)
<i>JNPR</i>	22 Jul 2014	1.58%	-0.51%	-2.72%	-2.45%	-3.89%
<i>LRCX</i>	28 Apr 2014	6.98%	8.87%*** (0.0034)	10.74%*** (0.0000)	-0.73%	0.40%
<i>MRVL</i>	17 May 2012	-5.89%	-0.82%	1.55%	1.78%	-2.42%
<i>MSI</i>	28 Jul 2011	-0.39%	0.76%	-0.75%	-1.54%	-0.60%
<i>NTAP</i>	21 May 2013	6.16%	1.72%	-4.01%	-1.28%	-0.73%
<i>NVDA</i>	08 Aug 2013	5.38%	-1.74%	-2.37%	-1.63%	-1.78%
<i>NXP</i>	29 Aug 2018	4.65%	4.81%	1.67%	1.61%	2.39%
<i>STX</i>	02 May 2011	-7.61%	-5.90%	-3.64%	-2.29%	-0.87%
<i>SWKS</i>	22 Apr 2014	10.39%	12.53%*** (0.0094)	14.14%*** (0.0006)	14.18%*** (0.0001)	11.78%*** (0.0014)
<i>TER</i>	22 Jan 2014	13.08%*** (0.0043)	0.48%	1.57%	1.25%	3.24%
<i>VRSK</i>	14 Mar 2019	2.84%	-1.51%	-1.23%	-1.58%	-1.22%
Group CAAR	-	4.98%*** (0.0017)	2.56%*** (0.0050)	2.39%*** (0.0021)	1.92%*** (0.0054)	1.79%*** (0.0094)

Notes: p-values of significant results are shown in parenthesis

** Indicates statistical significance at the 10% level (p-value<0.10)*

*** Indicates statistical significance at the 5% level (p-value<0.05)*

**** Indicates statistical significance at the 1% level (p-value<0.01)*

Table B2. Event Study on Tech Dividend Omissions

<i>Security</i>	<i>Event Date</i>	<i>CAAR [-10,10]</i>	<i>CAAR [-3,3]</i>	<i>CAAR [-2,2]</i>	<i>CAAR [-1,2]</i>	<i>CAAR [0,3]</i>
<i>FICO</i>	17 May 2017	-7.24%** (0.0241)	-3.27%* (0.0763)	-0.83%	-0.48%	-2.52%** (0.0716)
<i>MPWR</i>	17 Apr 2013	1.98%	-3.20%	-2.21%	-5.43%** (0.0409)	-5.81%** (0.0291)
<i>WDC</i>	30 Apr 2020	-14.99%	-5.05%	-6.91%	-10.19%** (0.0458)	-10.42%** (0.0413)
Group CAAR	-	-6.54%	-3.76%	-3.25%	-5.32%*** (0.0075)	-6.19%*** (0.0020)

Notes: p-values of significant results are shown in parenthesis

** Indicates statistical significance at the 10% level (p-value<0.10)*

*** Indicates statistical significance at the 5% level (p-value<0.05)*

**** Indicates statistical significance at the 1% level (p-value<0.01)*

Table B3. Event Study on Industrials Dividend Initiations

<i>Security</i>	<i>Event Date</i>	<i>CAAR [-10,10]</i>	<i>CAAR [-3,3]</i>	<i>CAAR [-2,2]</i>	<i>CAAR [-1,2]</i>	<i>CAAR [0,3]</i>
<i>ALLE</i>	11 Feb 2014	13.94%* (0.0564)	1.28%	-0.38%	-0.48%	-1.01%
<i>CARR</i>	10 Jun 2020	-11.11%	-9.01%	-8.97%	-8.94%	-4.48%
<i>DAL</i>	08 May 2013	-4.08%	-4.13%	-2.93%	-2.56%	-2.80%
<i>FTV</i>	04 Aug 2016	-11.23%	-2.08%	-4.28%	-2.06%	-2.46%
<i>HII</i>	08 Nov 2012	-1.03%	-4.51%	-8.07%*** (0.0011)	-9.36%*** (0.0000)	-6.40%*** (0.0037)
<i>J</i>	19 Jan 2017	7.05%	5.11%	0.92%	1.06%	3.04%
<i>LDOS</i>	20 Mar 2012	5.57%	4.36%	2.11%	2.27%	1.86%
<i>ODFL</i>	25 Jan 2017	3.99%	1.87%	1.57%	1.29%	1.14%
<i>OTIS</i>	06 May 2020	7.43%	4.81%	5.85%	5.84%	8.11%
<i>PWR</i>	07 Dec 2018	-6.80%	-6.69%** (0.0277)	-8.88%*** (0.0007)	-6.33%*** (0.0062)	-2.96%
<i>XYL</i>	02 Nov 2011	-15.39%	-8.01%	-2.14%	-8.89%	-17.43%
Group CAAR	-	-0.71%	-1.37%	2.14%	-2.44%	-2.01%

Notes: p-values of significant results are shown in parenthesis

** Indicates statistical significance at the 10% level (p-value<0.10)*

*** Indicates statistical significance at the 5% level (p-value<0.05)*

**** Indicates statistical significance at the 1% level (p-value<0.01)*

Table B4. Event Study on Industrials Dividend Omissions

<i>Security</i>	<i>Event Date</i>	<i>CAAR [-10,10]</i>	<i>CAAR [-3,3]</i>	<i>CAAR [-2,2]</i>	<i>CAAR [-1,2]</i>	<i>CAAR [0,3]</i>
<i>GNRC</i>	10 Jun 2013	-2.62%	-10.77%** (0.0218)	-12.02%*** (0.0027)	-12.41%*** (0.0006)	-13.58%** (0.0002)
<i>LUV</i>	27 Mar 2020	-13.83%** (0.0301)	-14.39%*** (0.0001)	-10.63%*** (0.0008)	-14.32%*** (0.0000)	-16.36%*** (0.0000)
Group CAAR	-	-7.14%	-12.44%*** (0.0000)	-11.20%*** (0.0000)	-13.25%*** (0.0000)	-14.85%*** (0.0000)

Notes: p-values of significant results are shown in parenthesis

** Indicates statistical significance at the 10% level (p-value<0.10)*

*** Indicates statistical significance at the 5% level (p-value<0.05)*

**** Indicates statistical significance at the 1% level (p-value<0.01)*

Appendix C - Graphical Analysis

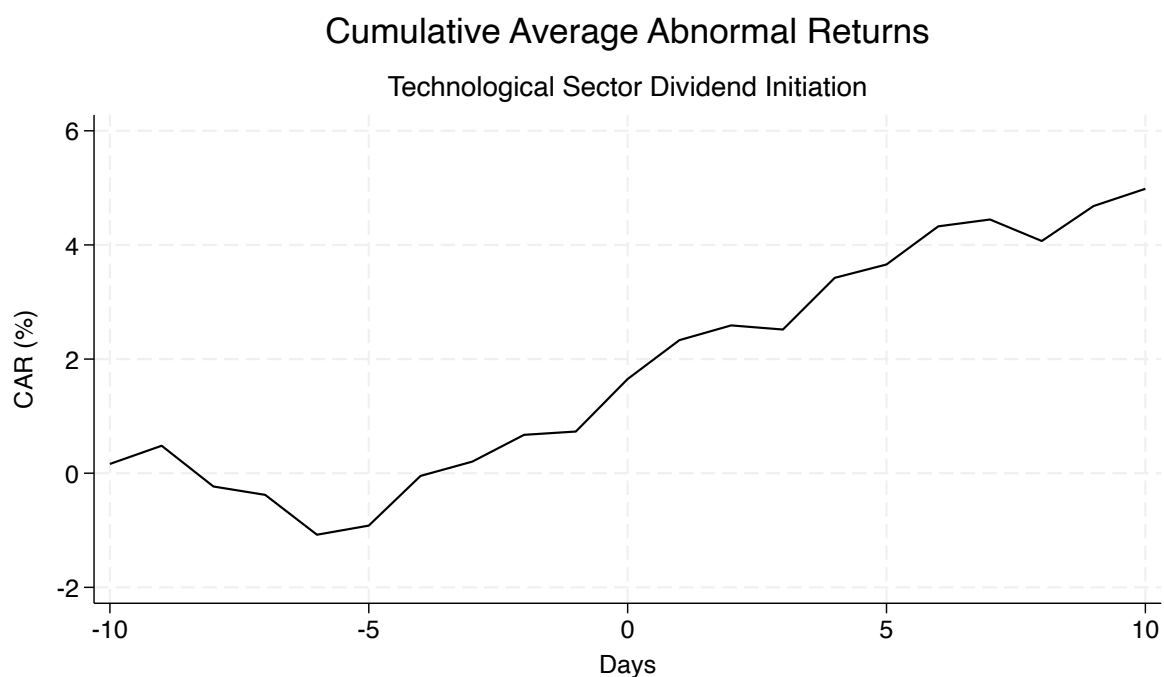


Figure C1. CAAR for Technological Sector Dividend Initiations; Event window [-10, 10]

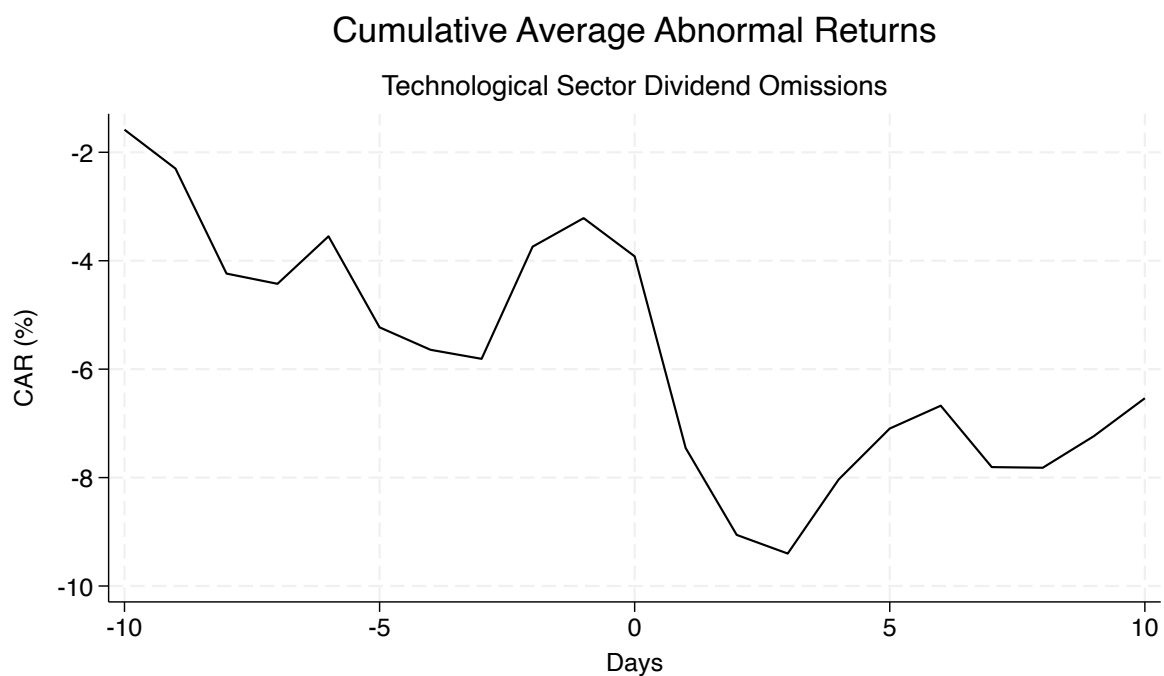


Figure C2. CAAR for Technological Sector Dividend Omissions; Event window [-10, 10]

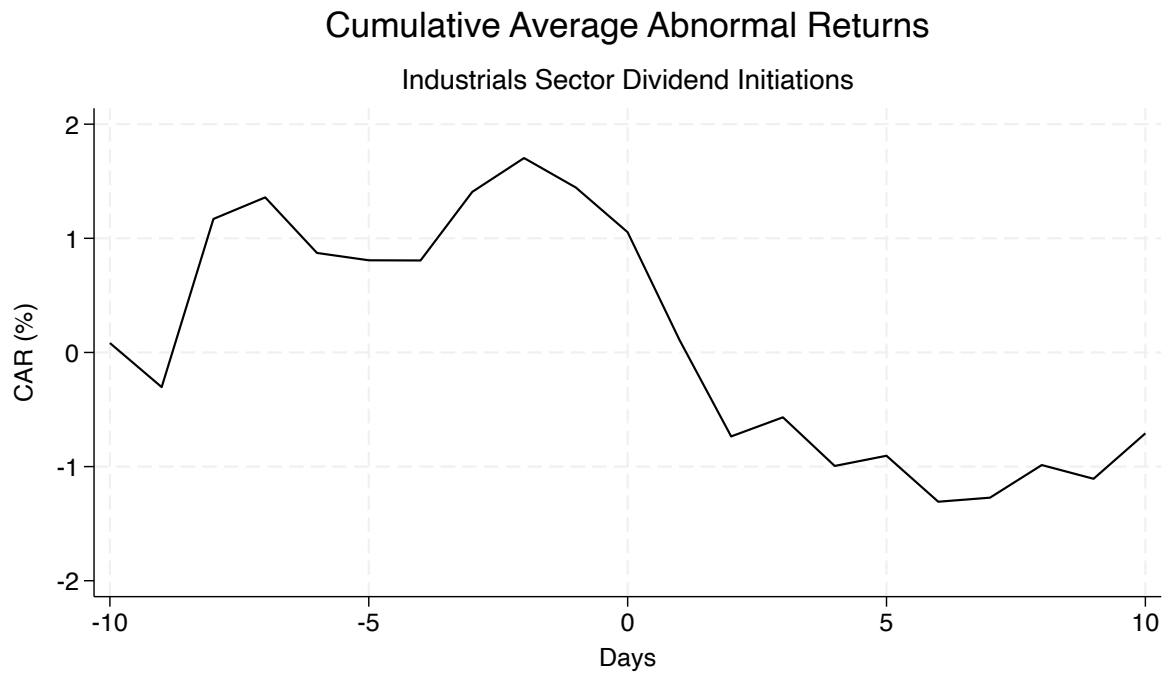


Figure C3. CAAR for Industrials Sector Dividend Initiations; Event window [-10, 10]

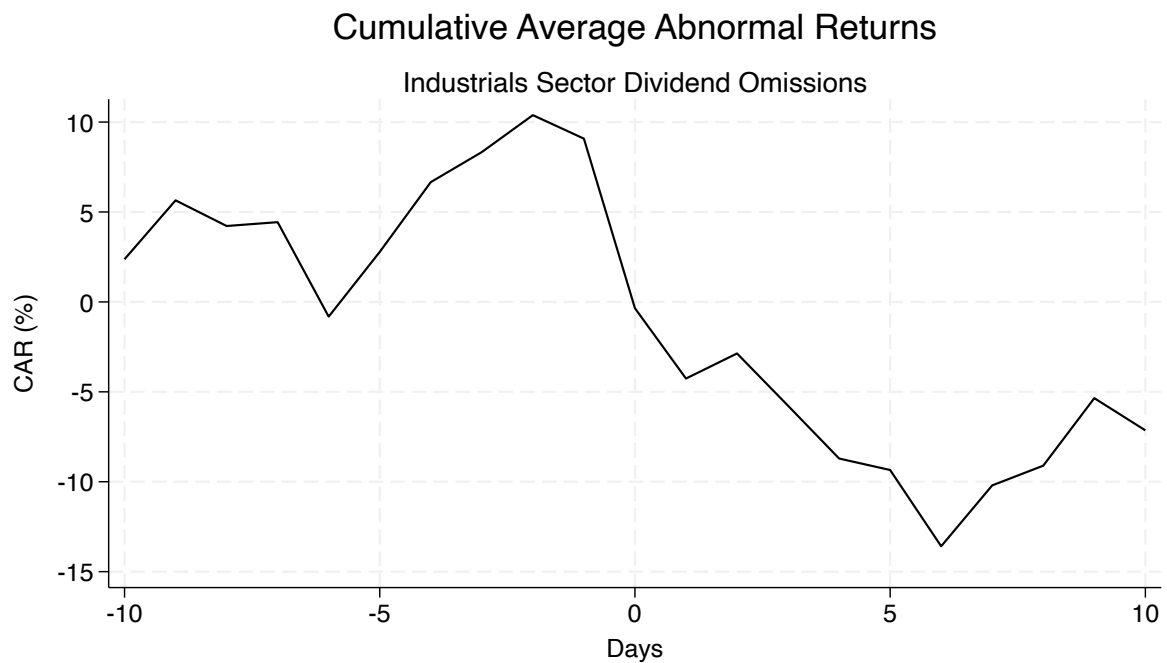


Figure C4. CAAR for Industrials Sector Dividend Omissions; Event window [-10, 10]