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"The Effect of Formula One Grand Prix: An Event Study on Stock Market Reactions and Sponsorship Impacts"

Daniela Filipa dos Santos Oliveira

Master in Hospitality and Tourism Management

Supervisor:

Ph.D, Ana Margarida Mendes Camelo Oliveira Brochado, Associate Professor with Habilitation, Department of Marketing, Operations & General Management at Iscte Business School

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BUSINESS
SCHOOL

Department of Marketing, Operations & General Management

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Dedication and Acknowledgements

Firstly, I would like to thank everyone who contributed to this dissertation, whether directly or indirectly.

I would like to thank Professor Ana Brochado for agreeing to supervise my dissertation, for all her help, contribution, and availability in the development of this project, which is so important to me.

I would also like to thank my parents, my grandmother, and the rest of my family, who have always supported me throughout this long academic journey, motivating me to do my best and encouraging me in all the decisions I made.

My final thanks goes to my friends, who have also always supported me and been there for me, even in the most difficult moments, and never let me give up.

Resumo, Palavras-Chave e Classificações JEL

Esta dissertação emprega métodos de estudo de eventos, com ênfase nas respostas do mercado de ações e na criação de valor do patrocínio, para investigar como os eventos do Grande Prémio de Fórmula 1 e os anúncios de patrocínio afetam os mercados financeiros. A Fórmula 1 é a categoria internacional mais alta de corridas para carros de Fórmula 1 de roda aberta e monoposto, administrada por uma organização sem fins lucrativos.

Para este artigo, está a ser realizada uma análise do mercado de ações de uma janela de 50 dias, começando 25 dias de negociação antes e terminando 25 dias de negociação após cada anúncio de patrocínio, para investigar se "os anúncios de patrocínio dos Grandes Prémios de Fórmula 1 estão associados a retornos anormais estatisticamente significativos nos preços das ações dos patrocinadores" e se "os anúncios de patrocínio feitos geram uma reação positiva na avaliação do mercado de ações das empresas patrocinadoras".

O estudo examina 29 anúncios de patrocínio de empresas globais, incluindo Pirelli, DHL, AWS, Heineken, Aramco, Oracle e outras, abrangendo um período de 20 anos (2004-2024). A fim de determinar se os patrocínios da F1 geram reações significativas dos investidores, o estudo analisa retornos anormais e cumulativos anormais em torno das ocorrências de patrocínio.

Embora a significância estatística seja diferente entre empresas e contextos, os resultados mostram um efeito benéfico geral no desempenho das ações das empresas patrocinadoras após as datas dos anúncios. Os resultados indicam que, embora alguns patrocínios tenham impactos limitados ou inconsistentes, aqueles com grande congruência entre marca e evento e alcance global são mais propensos a gerar valor financeiro.

Palavras-Chave – Estudo de eventos, Eventos, Desporto, Fórmula 1, Desportos motorizados, Patrocínio

JEL class – Estudo de eventos

Abstract, Keywords and JEL Classifications

This dissertation employs event study methods, with an emphasis on stock market responses and sponsorship value creation, to investigate how Formula One Grand Prix events and sponsorship announcements impact financial markets. Formula 1 is the highest international racing class for open-wheel, single-seater Formula 1 cars, run by a non-profit organization.

For this study, it is being conducted an analysis of the stock market of a 50-day window starting 25 trading days before and ending 25 trading days after each sponsorship announcement and to investigate if Formula One Grand Prix sponsorship announcements are associated with statistically significant abnormal returns in the stock prices of sponsors, and if Sponsorship announcements generate a positive reaction in the stock market valuation of sponsoring companies.

The study examines 29 sponsorship announcements from global companies, including Pirelli, DHL, AWS, Heineken, Aramco, Oracle, and others, spanning a 20-year period (2004–2024). In order to determine if F1 sponsorships generate meaningful investor reactions, the study looks into abnormal and cumulative abnormal returns around sponsorship occurrences.

Although statistical significance differs among companies and settings, the results show an overall beneficial effect on sponsoring corporations' stock performance after announcement dates. The results indicate that while some sponsorships have limited or inconsistent impacts, those with great brand-event congruence and global reach are more likely to generate financial value.

Keywords – Event study, Events, Sports, Formula One, Motorsports, Sponsorship

JEL class – Event Studies

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1. Introduction

Motor racing is one of the most physically and mentally challenging of all sports, not only for racing drivers themselves but also for the teams that play an integral role in the eventual performance of the car (Klarica, 2001). Here is where Formula 1 enters.

The origins of F1 can be traced back to car races in Europe in the late 19th century. On July 23, 1894, a French newspaper "Le Petit Journal" organized the world's first car race with the participation of 21 cars. The racing route went from Paris to Rouen, covering a distance of about 80 miles with a lunch break halfway through. After World War II, a series of racing rules at different levels were formulated, known as "formula" (Li, et al., 2023). Formula in the name refers to a set of strict rules that all participating parties, including the FIA, drivers, constructors, and mechanics of the car, organizers, and circuits, must follow (F1 Chronicle, 2020; FIA, 2022c; Kyösti, 2023). In 1950, the FIA set up a worldwide championship called F1 by integrating the Grand Prix races in seven countries. The first race was held at the Silverstone circuit in the U.K. on May 13, 1950, which has been memorized as the beginning of F1 (Næss, 2020; Li, et al., 2023).

Within the Formula One world, companies have many ways to sponsor – all deals will have their time and place. For several decades, sports sponsoring has enjoyed major growth relative to other marketing communication forms.

As sports properties around the world have grown in popularity and profitability, sponsorship has become an important part of the sports industry. Sponsorship is defined as a business relationship in which a cash and/or in-kind fee is paid to a sports organization or event in return for access to the exploitable commercial potential associated with that organization or event. It has become an attractive brand-building strategy for corporations seeking to grow their reach and gain an advantage over their competition, allowing brands to connect with their consumers through unique and exciting experiences and to engage their senses and imagination, ultimately helping the brand cultivate deeper and more emotional relationships with its target market (Wellington, et al., 2022).

Through the sponsorships, the F1 teams can expand to other industries, gaining visibility and innovations outside of the primary sports markets. For the sponsor, the

benefits include great opportunities for networking and visibility to millions of watchers (Mourão, 2017). To support the hypothesis, Schredelseker & Fidahic (2011) studied whether the Formula One Grand Prix races have an impact on stock prices by analysing the stock market response to race performance from 2005 to 2007 using event study methodology (Kyösti, 2023).

To continue the study of the stock market responses to the sponsorship announcements, this paper aims to analyze F1 sponsors to understand the fluctuation of the stock values according to the sponsor announcements, analyze unusual returns related to sponsorship announcements by using event study techniques, and its the effects on the stock market.

For this to be possible to understand, we need to know what teams there are, which sponsors exist, to narrow it down to common ones between teams, then, after this analysis, a research of the sponsorship announcement dates has to be done, which allows the author to analyze the stock market activity between the chosen timeframe.

This study aims to use event study approaches to examine the stock market returns of teams and the sponsors connected to Formula One Grand Prix events.

Due to the fact that it covers the convergence of banking and sports, which are two fields that are becoming increasingly linked in the current economy, this research is both essential and relevant. Formula One, which is widely considered to be one of the most important international athletic competitions, serves as a forum for the merging of financial markets, regional economies, and sponsorship. The findings have the potential to provide informative information for all of the stakeholders involved, including politicians, investors, and people who support the event. In addition to this, it bridges the gap between sports economics and financial analysis, which is another reason why it is significant not just academically but also practically.

To be more specific, we can recognize the economic significance as well as the contribution to the field of methodology:

Economic Relevance:

If investors and corporate strategists are aware of the ways in which Formula One events influence stock values, they will have access to critical information that will assist them in making the most appropriate decisions on sponsorship and investment.

Methodological Contribution:

The use of event research methodologies within the context of Formula One provides a robust methodological foundation that has the potential to be used for other sports or event-based studies.

To conclude, the structure of this dissertation is a traditional one with a typical format, which includes a title page, an abstract, acknowledgements, a table of contents, an introduction, a literature review, the methodology, the results/findings, the discussion, the conclusion and recommendations, references, and the appendices.

2. Literature Review

2.1 Event Study

Originally introduced to a broad audience of accounting and financial economists in two landmark papers by Ball and Brown (1968) and Fama et al. (1969), event studies have since become ubiquitous in capital markets research. There have been many advances in event study methodology over the years, but the core elements of a typical event study can be found in these early papers.

However, Ball–Brown and Fama–Fisher–Jensen–Roll were not the first event studies. MacKinlay (1997) reports an early event study by Dolley (1933) examining stock price reaction to stock splits and refers to several other published papers indicating that by the 1960s, event studies had made their way into leading business economics journals (Myers and Bakay, 1948; Barker, 1956, 1957, 1958; Ashley, 1962; Corrado, 2010).

The event study methodology has, in fact, become the standard method of measuring security price reaction to some announcement or event. In practice, event studies have been used for two major reasons: 1) to test the null hypothesis that the market efficiently incorporates information, and 2) under the maintained hypothesis of market efficiency, at least with respect to publicly available information, to examine the impact of some event on the wealth of the firm's security holders (Binder, 1998).

2.2 Events

The Accepted Practices Exchange (APEX) Industry Glossary of Terms (CIC, 2003) defines an event as, 'An organized occasion such as a meeting, convention, exhibition, special event, gala dinner, etc (Bowdin et al., 2006).

An event is often composed of several different yet related functions.' US-based Dr Joe Goldblatt (2005, p. 6), acknowledged as one of the pioneers in events literature, focuses on special events as 'a unique moment in time, celebrated with ceremony and ritual to satisfy specific needs.' Professor Donald Getz (2005, p. 16), based in Canada and a recognized expert in the field, suggests two definitions, from the event organizer and customer/guest perspectives: A special event is a one-time or infrequently occurring event outside normal programs or activities of the sponsoring or organizing body; and to the customer or guest, a special event is an opportunity for a leisure, social, or cultural

experience outside the normal range of choices or beyond everyday experience (Gallarza, Arteaga, & Gil-Saura, 2013).

Getz (2005) notes that among the attributes creating ‘specialness’ are festive spirit, uniqueness, quality, authenticity, tradition, hospitality, theme, and symbolism. Bowdin et al. (2006), drawing together UK and Australian perspectives, note that the term has been used ‘to describe specific rituals, presentations, performances or celebrations that are consciously planned and created to mark special occasions and/or to achieve particular social, cultural or corporate goals and objectives’ (Bowdin et al., 2006).

2.2.1 Corporate Events

Corporate events, accompanied by firm decisions, play a vital role in a company’s operations and immediately impact shareholder value. Making a cautious decision before announcing it to the public requires time and diligence since any corporate event announcement triggers reactions in the capital market, directly affecting investor wealth. Therefore, detecting information about corporate events can help investors make efficient investment decisions and enter trades before the announcements (Zhaomin Xiao, 2023).

Corporate events may include incentive travel, client entertainment, staff entertainment, meetings, and conferences (Rogers, 2003), which would lead to crossover with other categories. However, generally, it has also been a term used interchangeably with corporate hospitality. The Corporate Event Association (CEA) (now Eventia) defines corporate hospitality as an event for the benefit of an organisation entertaining clients or staff, or prospective clients at the organisation's expense. Corporate hospitality events include spectator sports, participating sports, arts and culture, and a range of other events (Bowdin & McPherson, 2006).

2.2.2 Sports Events

Sports tourism reveals great influence on modern life, and there are distinct road running, bicycle racing, or triathlon challenges held on almost every holiday. Sports tourism presents the functions of entertainment, fitness, and emotional regulation and is an important way to create people’s beautiful mind and an important supplement of traditional tourism (Getz, & McConnell, 2011).

Sports events are the focus of the sports tourism market; holding sports events could increase the organizers’ exposure and visibility, as well as result in considerable tourism receipts for the places. Sports events would increase tourists’ consumption in the

places and create new job opportunities and considerable income. Apparently, holding large and important sports events has become an important route for social marketing or social development (Guo & Nie, 2023). Considering the impact that they can have on the community, participants, organizers, and local population, they are very important.

The relevance of studying sports events is attributable to the importance of the event itself based on its reputation, sustainability, and the impact it has on the participants, organizers, and community. On the other hand, the participants are equally important, focusing on their profiles and the impacts that their defining characteristics have on the planning and implementation of these types of events. All these aspects can be seen as a starting point for the proper organization and planning of such events in the future (Buhaș, et al., 2023).

Moreover, participants in sports events are more likely to directly connect the rational impression on events (e.g. service quality, traffic flow) with local social imagery. Also, the attitude and professional ability of service staff in events or the advanced publicity of events do not appear to influence the promotion of local social imagery. Nevertheless, participants' satisfaction with the signposts, information, sites, medical facilities, or schedule of events might directly enhance participants' local social imagery (Fritz et al., 2022).

More importantly, large events would attract the reports of international media; organizers' construction on service, culture, image, and equipment would promote the international visibility and imagery of the society (Guo & Nie, 2023).

The needs must be considered when planning the event, which is why most studies that look at the impact of sports events tend to focus on large-scale events, particularly looking at their economic effects (Buhaș, et al., 2023).

2.3 Sports

Sports can be classified according to the type and intensity of exercise performed and also with regard to the danger of bodily injury from collision or the consequences of syncope. Competitive sports can place an athlete with a cardiovascular abnormality at medical risk because of an increase in workload on the heart or stress on the vascular system caused by increases in blood flow and pressure and increased body temperature (Mitchell, Haskell, & Raven, 1994).

In sports science and the study of physical performance, motion capture technology has become very popular over the past few years. This comprehensive

analysis examines the recent breakthroughs in motion capture technology and its many uses across several sectors. The previously mentioned categories involve all aspects of athletic performance, including coordination among soccer players, tracking movement in football, dynamics of diving boards, rehabilitation of injuries, protection of joints, and biomechanical evaluations during sports motions. In the subsequent parts, we will provide an extensive review of the results and implications obtained from these investigations (Mazian, et al., 2024).

2.3.1 Motorsports

Motor racing is one of the most physically and mentally challenging of all sports, not only for racing drivers themselves but also for the teams that play an integral role in the eventual performance of the car. Motor racing is a major sport in the United States with Nascar, Cart World Series, and the Indy Racing League to name but a few. In Europe, there is Formula 3, Formula 3000, and rallying. In Asia, there is also a huge number of categories in many countries—for example, in Australia alone there is the Shell Touring Car series, Formula Holden, Formula Ford, GTP, and Nations Cup series, and, in other parts of Asia, the Asia Pacific Rally Series and the Japanese sports car series coexist.

In almost all of the categories identified above, particularly Formula 1, motor racing drivers must execute numerous motor and cognitive skills simultaneously. They must remain calm and focused on their vehicle's performance, the track, and their competitors only centimeters away, while travelling at speeds of 150–300 km per hour.

They must also maneuver gears and foot pedals while steering their vehicle, using highly developed coordination. Each movement must be rapid and precise. During this process, drivers must also have the ability to communicate effectively with their pit manager on their headset radio and ingest fluids through their specially designed hydration systems. Pit crews, including engineers, mechanics, tire specialists, and managers, must work as a close team, follow the instructions of a leader, and conduct their physically demanding tasks, whether it be loading fuel or changing tires. In this sport there is no room for error. Any mistake may cost a life (Klarica, 2001).

2.3.2 Formula One (F1)

The origins of F1 can be traced back to car races in Europe in the late 19th century. On July 23, 1894, a French newspaper "Le Petit Journal" organized the world's first car race with the participation of 21 cars. The racing route went from Paris to Rouen, covering

a distance of about 80 miles with a lunch break halfway through. This event is regarded as a milestone in the history of car racing, marking the beginning of motorsports.

At that time, car races were held on highways between towns, with an emphasis on the endurance of car drivers, rather than the high-speed performance of engines. When it came to the early 20th century, a form of car racing called Grand Prix racing began to rise. After World War II, there was a desire to revive Grand Prix racing, so FIA was established in 1946, aiming to become "the sole international body governing automobile sport". A series of racing rules at different levels were formulated, known as "formula" (Li, et al., 2023). Formula in the name refers to a set of strict rules that all participating parties, including the FIA, drivers, constructors, and mechanics of the car, organizers, and circuits, must follow (F1 Chronicle 2020; FIA 2022c). As the sport has developed, the regulation has increased considerably. FIA (2021) has divided the regulations into four categories: sporting regulations, technical regulations, financial regulations, and related regulations (Kyösti, 2023).

In 1950, the FIA set up a worldwide championship called F1 by integrating the Grand Prix races in seven countries. The first race was held at the Silverstone circuit in the U.K. on May 13, 1950, which has been memorized as the beginning of F1 (Næss, 2020; Li, et al., 2023).

Remaining true to the culture of innovation during the generations of the sport, the cars have developed to be one of the most technologically advanced automobiles in the world (Patel & Spurlock 2022; FIA 2022a).

The official F1 season begins in March and ends in December. Starting as a European sport, F1 has spread around the world, and in recent years its races have included races on five continents: Europe, Asia, Australia, North America, and South America. The average race time is 2 hours, and the average length of a circuit is 5 kilometers. The length between circuits varies, as well as the difficulty. One lap means one round around the circuit, and races are usually specified as the number of laps of a particular circuit. The distance of all races is equal to the least number of complete laps which exceed 305 kilometers (FIA, 2022c). The number of Grand Prix has varied during seasons – the season 2022 Formula 1 calendar features a record 23 races (F1 Chronicle, 2020; Kyösti, 2023).

A typical race takes place from Friday to Sunday. On the first day, teams participate in two free practice sessions, which allow drivers to familiarize themselves with the track, test different tire compounds and car setups, and collect data to determine

what works best for their car and drivers on that particular circuit. On Saturday, teams will complete a third and final free practice session before participating in a qualifying session that determines the starting grid for the race. On Sunday, the official race takes place and lasts approximately two hours (Wood & Burkhalter, 2023).

The Formula One World Championship comprises two titles of World Champion, one for drivers and one for constructors. Driver's World Championship is awarded to the driver with the highest number of points scored during all the competitions that have taken place during a season. Each constructor enters the championship with two cars and drivers, so the constructor's world championship is awarded to the constructor with the highest number of points considering the results from both cars (FIA, 2022c). At each competition, the points for both championship titles are awarded according to a scale presented in Table 1. Points are awarded to both drivers and constructors for other achievements as well, such as the fastest valid lap time (Kyösti, 2023).

POSITION	**CHAMPIONSHIP F1 POINTS**
1st	25
2nd	18
3rd	15
4th	12
5th	10
6th	8
7th	6
8th	4
9th	2
10th	1
Fastest Lap (If in top 10)	1 Bonus Point

Table 1 - F1 Point System (F1 Points System | Easy Guide to Understanding F1 Points, 2025)

2.4 Sponsorship

As sports properties around the world have grown in popularity and profitability, sponsorship has become an important part of the sports industry. Sponsorship is defined as a business relationship in which a cash and/or in-kind fee is paid to a sports organization or event in return for access to the exploitable commercial potential

associated with that organization or event. It has become an attractive brand-building strategy for corporations seeking to grow their reach and gain an advantage over their competition allowing brands to connect with their consumers through unique and exciting experiences and to engage their senses and imagination, ultimately helping the brand cultivate deeper and more emotional relationships with its target market (Wellington, et al., 2022).

The widespread interest in sports, diverse and passionate fan followings, and extensive coverage via the media are some of the reasons why companies choose to invest in sports properties. Some of the most common elements of a sponsorship agreement include the right for the sponsor to use a logo or trademark of a sports property, entitlement to an event or a venue, becoming involved in promotional activities, the execution of hospitality programs, and other special events, and having a presence throughout the media assets of the sports property. Some of the trends in today's sports landscape that are affecting sponsorship include shifts in consumers' appetite for and consumption of sports, the emergence of new properties like esports, increasing momentum of women's sports, legalization of sports gambling, prominence of digital media platforms in sponsorship activation and increased use of analytics in all aspects of the sports business, coupled with growing expectations from sponsors for evidence that shows a return on investment (ROI) (Wellington, et al., 2022).

2.5 Sponsorship, Event Study and Sports

Since the 1990s, the empirical literature has tried to determine the impact of sports sponsorship announcements on shareholder value (stock return). Companies recognize the commercial value of attaching their brand to popular sports properties and events, viewing it as an essential and most popular component of their marketing mix. It achieves a multitude of objectives, such as greater consumer awareness and increased sales (Eshghi, 2022).

A key research challenge relates to the measurement of stock value's reaction to new information on hosting a mega sporting event. Without such new information, it should be assumed that the market will follow no discernible pattern or trend, i.e., it will move according to the rules of the so-called random walk (Kwon & Cornwell, 2021). Whenever there is new information, the market reacts in the right way, which is reflected in stock prices. Information may contribute to both the growth and decline of the company's market valuation (Martinez & Janney, 2015; Ramdas et al., 2015). This may

indicate that although there are theoretical grounds for gaining benefits on financial markets due to the announcement of the results of selecting the host of a large sporting event, there are also some limitations resulting from the crowding-out effect (Liu & Wilson, 2014; Preuss, 2011) or the difficulty in convincing shareholders to reasonably large expenses incurred by sponsoring companies (Fizel & McNeil, 2015; Mazodier & Rezaee, 2013; Zawadzki & Potrykus, 2023).

Millions of dollars are spent on sports property deals each year (Kim, Lee, Magnusen, & Kim, 2015). In 2018, companies globally spent $44.3 billion on this publicity alone (Two Circles, 2020). In 2019, the data-driven sports agency Two Circles predicted firms would amp up their sponsorship spending to $62.2 billion by 2024 (Two Circles, 2019). Extreme fragmentation (the exponential growth in the number of TV and radio channels, as well as print magazines), the digital explosion, social media, and the introduction of personal video recorder (PVR) and over-the-top (OTT) streaming services changed the marketing landscape, making the job of marketers more difficult and complicated (Curcio, 2017). With fans and consumers watching live sports and interacting with their favorite teams and events on social media (Santomier, 2008), sports sponsorship became more attractive, providing an excellent opportunity for companies to connect with them directly (Eshghi, 2022).

Sports sponsorship announcements by firms in emerging and other markets have received very little attention. Analysis of Heineken's €20 million renewal of its UEFA Champions League sponsorship, MTN's US$65 million new sponsorship of the FIFA World Cup, or SABMiller's US$9.4 million renewal of its Cricket South Africa sponsorship have not been considered in previous research (Jensen & Hsu, 2011; Kruger, Goldman, & Ward, 2014).

Stock prices instantaneously reflect all the available public information associated with a company's profitability (Malkiel & Fama, 1970), so significant differences can be detected before and after an announcement is made. Abnormal returns arise when the market anticipates an announcement that could have a positive or negative effect on the firm's future cash flow, causing a rapid increase or decrease in its stock price. But exactly how financial markets and shareholders view such investment fluctuations are unknown (Eshghi, 2022).

Beginning with the work of Farrell and Frame (1997) on announcing sponsorship of the 1996 Summer Olympics, event studies in the field of broadly understood sports have grown in popularity and reach, covering topics such as venue naming rights (Becker-

Olsen, 2003; Leeds et al., 2007), scandals of athletes in private life (Hood, 2012), doping among athletes (Danylchuk et al., 2016; Drivdal et al., 2018), or corruption (e.g., Hundt & Horsch, 2019). The research conducted so far in the worldwide literature confirms the ambiguity of the impact of sporting events on the economy of the host. In the context of sports sponsorship, the scope of the studies went beyond the largest sporting events and also concerned motor sports such as Indy 500 and NASCAR (Reiser et al., 2012; Zawadzki & Potrykus, 2023).

2.6 Sponsorship, F1, and Event Study

FIA (2021) has divided the regulations into four categories: sporting regulations, technical regulations, financial regulations, and related regulations. Financial regulations are designed to achieve three objectives in the Formula One championship: to promote competitive balance, to promote sporting fairness, and to ensure the long-term financial stability and sustainability of the teams, without failing to preserve the uniqueness of the sport (FIA 2022b). Among other things, financial regulations also define the Cost Cap, which was first introduced for season 2021, limiting the annual spending of each team to 175 million dollars in 2021 and 140 million dollars in 2022 (Barretto 2019; FIA 2022b). Even though F1 teams have different ownership structures, the regulations apply to all of them. The differences in ownership structures make it difficult to compare the economics of each team. Most of the teams' annual revenue comes from sponsorships, prize money, and drivers and team owners. F1 teams often have partnerships with major companies that provide them with funding in exchange for advertising and branding opportunities. Sylt (2018) points out the importance of race results over profit as the barometer of success in Formula One, meaning that sometimes teams prefer winning the race over making a profit, which can be seen in the tabulated net earnings. Since chances of success are greater the more the team spends, teams with a greater annual budget have been able to dominate the sport for several years.

The greatest part of F1 teams' annual revenue usually consists of money from sponsors - according to Mourão (2017, 88), up to three-quarters of most teams' revenue comes from sponsors' money. Sponsoring includes supporting an activity that is not directly linked to the sponsoring company's normal business, seeking to achieve favorable publicity, and adding value for a company or its brand (Bennett, 1999). Sports sponsoring can focus on sponsoring, for example, a single athlete, team, association, or

event, and it can be conducted in different ways. In the Formula One world, companies have many ways to sponsor – all deals will have their time and place.

For several decades, sports sponsoring has enjoyed major growth relative to other marketing communication forms. After the financial crisis started in 2007, sponsoring overall was seen as wasteful and excessive, but since the recovery, opportunities are more widely recognized, and it seems that sponsorship will play a more significant role in the future (Meenahgan, McLoughlin & McCormack 2013; Vance, Raciti & Lawley 2016). In 2015, the sports sponsorships segment alone was worth 15,5 billion dollars in North America and can therefore be seen as an important revenue generator (Jones, 2016). According to Meenaghan et al. (2013), the sport remains the dominant category in sponsoring, but the overall market picture shows that patterns of expenditure have shifted more towards sports-related venue sponsorship, and the importance of social media is growing all the time. Through sponsorships, the F1 teams can expand to other industries, gaining visibility and innovations outside of the primary sports markets. For the sponsor, the benefits include great opportunities for networking and visibility to millions of viewers (Mourão, 2017).

Schredelseker & Fidahic (2011) studied whether the Formula One Grand Prix races have an impact on stock prices by analysing the stock market response to race performance from 2005 to 2007 using event study methodology. They considered the winning team to be the team with the highest total points, and the study included three teams: Ferrari, McLaren Mercedes, and Renault F1. On average, the average abnormal return on the event day after McLaren-Mercedes' win was +0,70% and +0,09% after a loss, and for Ferrari +0,62% and +0,28% respectively, creating similar results: there could be found a positive impact on the valuation of the company's stock whenever attending a race. For Renault, however, the result was the opposite: in both years considered, the case of win dropped the Renault share price by 0,24% on average, while the case of loss increased it by 0,88%.

Axelsson & Lindholm (2010) applied the event study methodology to examine whether the outcome of an F1 race during season 2009 affects stock returns. They divided the possible outcomes into the following categories: winning, losing, and other events such as mechanical failure or an accident. The study concludes that the effect of Formula One events can be considerable, but in general, it seems to be dependent on the type of

sponsoring company. It must be noted that the study covered only one season, which makes the amount of event data limited.

Cornwell, Pruitt & Van Ness (2001) studied the share price impact of sponsoring drivers in the Indianapolis 500-mile race, which is an annual part of the American IndyCar racing series. They examined the value of victories and participation by using an estimation of time series data, by conducting a regression analysis between the stock return of the sponsoring company and an index, value-weighted by the Center of Research in Security Prices. They found results similar to Schredelseker & Fidahic's (2011) and Axelsson & Lindholm's (2010) studies: the impact is related to how well the sponsor and event match. Sponsors directly related to the consumer automotive industry yielded significantly greater stock prices than sponsors related to, for example, pizza or cigarettes. They found statistically and economically significant gains in market value for sponsors with logical ties to the industry around the time of the victories of sponsored drivers (Kyösti, 2023).

2.7 Empirical Table

Event Studies Categories	Author & Year	Type of Strategy	Research Context	Input & Output Variables	Statistical Analysis Model	Control Variable	Study Period	Database
SPORTS	**ABRIL et al. (2017)**	How Does Wall Street React to Global Sports Sponsorship Announcements? An Analysis of the Effect On Sponsoring Companies' Stock Market Prices	The Olympic Games (Athens 2004, Beijing 2008, London 2012), the FIFA World Cup (Korea and Japan 2002, Germany 2006, South Africa 2010), the UEFA European Championship (Portugal 2004, Austria and Switzerland 2008), and the America's Cup (Auckland 2003, Valencia 2007, Valencia	**INPUT**: Illuminate previous research controversies by examining several international sports tournaments in various countries over a 10-year period. **OUTPUT**: Patell Z test and ANOVA multifactorial analysis.	Two-step market model	N = 98 Sponsorships	10 years	Factiva
SPORTS	**Bouchet et al. (2015)**	The Impact of International Football Matches on Primary Sponsors and Shareholder Wealth	The teams in the study represent four leagues—the English Premier League, Italian Serie A, Spanish La Liga, and German Bundesliga	**INPUT**: Examine returns to shareholders for firms sponsoring international football matches using an event study analysis. **OUTPUT**: Multiple regression analysis.	OLS market model return adjusted method (henceforth called market model adjusted), (b) the Scholes-Williams variation of the simple OLS market model return adjusted method (henceforth called Scholes-Williams), and (c) a simple market return adjusted method (henceforth called market return adjusted)	N = 139 observations	5 years	Deloitte's "Football Money League" report
SPORTS	**Eshghi, K. (2019)**	Are sports sponsorship announcements good news for shareholders? A meta-analysis	Olympic Games,FIFA WorldCup, or themajorNorthAmericansports leagues (NBA, MLB, NFL, and NHL)	**INPUT**: This study integrates current research findings and establishes empirical generalizations on how sports sponsorship announcements impact firm value. **OUTPUT**: There was a positive and significant cumulative abnormal return (CAR).	The Meta-Analytic Regression Analysis (MARA) method	N = 41 samples	4 years	An online bibliographic search of ABI/INFORM, Google Scholar, and Social Citation Index2 was undertaken with a focus on these keywords: ''sports sponsorship", ''sports sponsorship announcement", and ''effectiveness of sports sponsorship" along with ''event study" in titles and abstracts.
SPORTS	**Hasan, F. and Al-Najjar, B (2024)**	Exploring the connections: Dividend announcements, stock market returns, and major sporting events	ICC Cricket World Cups and FIFA Football World Cups	**INPUT**: The research thoroughly examines the effects of these significant sports events on the stock market's reaction to dividend announcements. **OUTPUT**: Cumulative abnormal return (CAR).	Generalized Method of Moments (GMM) estimation method	N = 4021 observations	32 years	FTSE-350 index data
FORMULA 1	**Jensen et al. (2023)**	Analyzing Brand Strategy on an International Scale: The Sponsorship Performance Cycle in Formula One Racing	Formula One Racing Teams	**INPUT**: This study contributes a quantitative model that analyzes 53 years of data encompassing more than 3,000 sponsorships across six continents. **OUTPUT**: Variance inflation factors (VIFs).	Signaling theory and build on the sponsorship performance cycle	N = 11 conversations	52 years	Engagement in 11 conversations that included executives from various stakeholder groups directly involved with F1 sponsorship.
SPORTS	**Baim, D et al. (2015)**	Olympic Sponsorships, Stock Prices, and Trading Activity	London 2012 Summer Olympic Games	**INPUT**: Investigate the existence of abnormal returns and changes in trading volumes on announcement dates for companies at two sponsorship levels, Official Olympic Partners and Official Olympic Supporters. **OUTPUT**: Descriptive statistics of our sample firms: the mean, standard deviation, minimum and maximum; and CAR.	Capital asset pricing model and Market model	N = 7 official Olympic Partners and 7 official Olympic Supporters	1 year	LexisNexis and Factiva
FORMULA 1	**Schredelseker, K and Fidahic, F (2011)**	Stock Market Reactions and Formula One Performance	Formula One Racing Teams	**INPUT**: They use an event study methodology analyzing the stock market response after race performances from 2005 to 2007. **OUTPUT**: Return on stock market prices.	Event study analyzing the return on stock market prices of the aforementioned motor car manufacturers in the days following a Formula One Grand Prix.	N = 19 races	2 years	Eurostoxx50 index
SPORTS	**Kwon, Y and Cornwell, T. Bettina (2020)**	Sport sponsorship announcement and stock returns: a meta-analytic review	Olympics, FIFA World Cup and professional sports	**INPUT**: This study aims to analyze the mixed findings from event studies in sport sponsorship to determine if sponsorship announcements influence stock market response. **OUTPUT**: Homogeneity test and sensitivity analysis.	Meta-analysis: (1) reported size-of-return data in a replication analysis (Datta et al., 1992), (2) correlation results from previous studies (Stahl and Voigt, 2008) and (3) estimated effect size based on test statistic values	N = 34 studies	21 years	ABI/ NFORM, EBSCO, ISI Web of Knowledge, PsichoInfo, GoogleScholar
FORMULA 1	**K. Storm et al (2020)**	The impact of Formula 1 on regional economies in Europe	Formula One Motor Racing	**INPUT**: This paper applies regression models to test the effects on GDP, employment, and tourism in European regions that have hosted Formula 1 Grand Prix from 1991 to 2017. **OUTPUT**: Fixed effects (FE) and Arrelano-Bond (AR).	Regression models	N = 10 regions	26 years	Eurostat

Table 2 - Empirical Table (Barrera Jr. & Ainlay, 1983)

3. Conceptual Model and Research Hypothesis

This paper aims to analyze F1 sponsors to understand the fluctuation of the stock values according to the sponsor announcements, analyze unusual returns related to sponsorship announcements by using event study techniques, and its effects on the stock market.

For this to be possible to understand, we need to know what teams there are, which sponsors exist, to narrow it down to common ones between teams, then, after this analysis, a research of the sponsorship announcement dates has to be done, which allows the author to analyze the stock market activity between the chosen timeframe.

The basic question asked— and answered—is simple but important: Are NASCAR sponsorships driven primarily by egos or economics? Because good (poor) managerial decisions should be associated with increases (decreases) in stock prices, the question of accountability may be restated as follows: Have stock market investors viewed NASCAR sponsorships as particularly good investment decisions? Or rather poor ones? By examining changes in stock prices around the time of announcement of NASCAR sponsorships, it is possible to get a firm handle on the market's unbiased assessment of the value of the sponsorships, net of the present value of all of the costs expected to be incurred.

Their findings document that, except for the case of companies specifically associated with the consumer automotive industry, no changes in the stock prices of winning sponsors were observed. However, companies with direct ties to the automotive industry experienced net-of-market stock price increases of almost 3 percent around the time of their Indianapolis 500 victories (Pruitt et al., 2004).

The results demonstrate that each incremental sponsor offering performance-based resources is associated with four additional team points in the championship, controlling factors such as past success and team experience. Conversely, sponsors offering access to financial or operational resources have no competitive impact. This performance-based sponsor effect is illustrated in models of the current and following seasons (Cobbs et al., 2021).

The overall results show a positive, but non-significant effect of partnership deal announcements on shareholder wealth. Further analysis considers the effects of sponsorship

announcements by each type of event window to see the impact of the announcement relative to time (pre-announcement, announcement day, post-announcement, and pre- to post-announcement). This closer examination of the event window shows that stock prices of sponsoring organizations increased in the pre-announcement window (Kwon & Cornwell, 2020).

Based on the empirical literature analyzed, two hypotheses were constructed by the author, supported by previous research:

H1: Formula One Grand Prix sponsorships are associated with statistically significant abnormal returns in the stock prices of sponsors.

H2: Sponsorship announcements generate a positive reaction in the stock market valuation of sponsoring companies.

After reaching the two hypotheses, a conceptual model was created to better understand the thought process of making the dissertation.

Figure 1 - Conceptual Model

Core Constructs and Relationships

1. **Sponsorship Announcements**
    - New deals
    - Renewals
    - Partnerships between F1 teams and sponsors
2. **Market Valuation**
    - Stock Market
    - Market Index
    - Volatility

3. **Stock Market Reactions**
    - Abnormal Stock Returns (AR)
    - Expected Returns (ER)
    - Cumulative Abnormal Returns (CAR)

Key Relationships

- **Sponsorship Announcements**

Depending on whether the sponsor has been in Formula One for a long time or is new to the sport, a new partnership can be seen differently, and the impact of the news on investors depends on the type of sponsorship.

- **Market Valuation**

Depending on whether the stock market is optimistic or pessimistic, the same sponsorship can mean different things, and investors may react more strongly to any news, including sponsorships, if there is a lot of volatility.

- **Stock Market Reactions**

Positive abnormal returns are the result of a strong performance, a well-known event, a favorable market, and reliable sponsorship, while poor timing, small sponsorship, an uncertain market, and weak performance all add up to negative or insignificant profits.

4. Contextualization

4.1. Formula 1

Formula 1 is the highest international racing class for open-wheel, single-seater Formula 1 cars, run by a non-profit organization. Since the first Formula 1 world championship race was held in 1950, F1 has been widely recognized not only as the world's most popular annual sporting series but also as the most prestigious motor racing competition (Patel & Spurlock 2022; FIA 2022a).

Formula One, formally known as The European Grand Prix Championship, is the highest class of international racing sanctioned by the governing body of motorsport, the Fédération Internationale de l'Automobile (FIA). The sport comprises ten teams consisting of two starting drivers, designers, aerodynamicists, race engineers, media personnel, strategists, and more, who work on the track at each race or in the teams' factories. Most teams originate and operate out of Europe, but the drivers hail from all corners of the globe (Wood & Burkhalter, 2023).

March marks the start of the official Formula One season, which concludes in December. F1 began as a European sport but has since expanded globally, with competitions now taking place in North America, South America, Asia, Australia, and Europe. A typical race lasts two hours, and a typical circuit is five kilometers long. Both the difficulty and the intervals between the circuits vary. Races are typically defined as the number of laps on a certain circuit, with one lap denoting one round of the circuit. Every race has a distance equal to the fewest total laps that are longer than 305 kilometers (FIA, 2022c). Season-by-season variations in the number of Grand Prix have occurred; the 2022 Formula 1 calendar boasts a record 23 races (F1 Chronicle, 2020; Kyösti, 2023).

The Formula One World Championship comprises two titles of World Champion, one for drivers and one for constructors (FIA, 2022c).

4.2. Sponsors Over the Years and at the Grand Prix

There have been many teams and sponsors over the years in the sport that started in the '50s called Formula 1, and some of those sponsorships were forged as the most iconic in sporting history.

But today, there is much more to such partnerships than simply paying for a spot on the car's livery, as marketing innovations and deeper relationships bring teams and backers ever closer. Since 1968, teams have devoted certain sections of their cars to be emblazoned with sponsorship decals and fill up the coffers in the process.

Money makes the world go round, as well as F1 cars, but sponsorship deals have moved on to become symbiotic partnerships aligned to achieve the best outcome for the team and, as a result, for the brands now so deeply associated with them (Mann-Bryans, 2024).

To demonstrate some of the main sponsors of all the teams at the Grand Prix in a year-long calendar for the past three years (2022-2024), we can look at the year 2022 (Annex A), the year 2023 (Annex B), and the year 2024 (Annex C) in the annexes.

4.3. Sponsorship History

F1 teams are competitive enterprises that access various categories of resources via corporate sponsorship in order to enhance performance and, in turn, maintain operations on an international scale (Cobbs, Groza, & Pruitt, 2012; Jensen & Cobbs, 2014). Due to the high-profile nature of F1, a team's birth, survival, competitive performance, sponsorship activity, dissolution, and institutional conditions are all publicly documented across global media sources.

Sport organizations are particularly dependent on sponsorship as a resource necessary for survival in the highly competitive arena of motorsport, such as the National Association for Stock Car Racing (NASCAR), V8 Supercars, and Formula One (F1) racing, where up to 70% of team budgets are funded by sponsorships (Sylt & Reid, 2008). The ultra-competitive arena of F1 motor racing provides an ideal context with which to study the influence of sponsorship

resources on organizational survival. In October of 2014, two different F1 teams (Caterham and Marussia) approached administration, the British equivalent of Chapter 11 bankruptcy (Sylt, 2015). The Marussia team went into administration in late 2014 and missed the final three races of the 2014 F1 season, while the remaining Caterham assets were liquidated at auction in early 2015 (Smith, 2015). The loss of two teams temporarily reduced the starting grid for F1 races to only 18 cars, which posed a management crisis for the sport as the 100-year agreement for the sport's commercial rights between the Fédération Internationale de l'Automobile (FIA) and private equity firm CVC was put in jeopardy of default (Sylt, 2015). Given F1 teams' heavy reliance on sponsorship to fulfill budgetary needs (Sylt & Reid, 2008), a better understanding of sponsorship resource priority could help existing and future teams survive and avoid administration or bankruptcy (Cobbs, Tyler, Jensen, & Chan, 2017).

For several decades, sports sponsoring has enjoyed major growth relative to other marketing communication forms. After the financial crisis started in 2007, sponsoring overall was seen as wasteful and excessive, but since the recovery, opportunities are more widely recognized, and it seems that sponsorship will play a more significant role in the future (Meenahgan, McLoughlin & McCormack, 2013; Vance, Raciti & Lawley, 2016).

FIA (2021) has divided the regulations into four categories: sporting regulations, technical regulations, financial regulations, and related regulations. Financial regulations are designed to achieve three objectives in the Formula One championship: to promote competitive balance, to promote sporting fairness, and to ensure the long-term financial stability and sustainability of the teams, without failing to preserve the uniqueness of the sport (FIA, 2022b). Among other things, financial regulations also define the Cost Cap, which was first introduced for season 2021, limiting the annual spending of each team to 175 million dollars in 2021 and 140 million dollars in 2022 (Barretto, 2019; FIA, 2022b).

Axelsson & Lindholm (2010) applied the event study methodology to examine whether the outcome of an F1 race during season 2009 affects stock returns. They divided the possible outcomes into the following categories: winning, losing, and other events such as mechanical failure or an accident. The study concludes that the effect of Formula One events can be considerable, but in general, it seems to be dependent on the type of sponsoring company. It must be noted that the study covered only one season, which makes the amount of event data limited (Kyösti, 2023).

4.4. Grand Prix Sponsors

For this paper, several companies were chosen because they sponsor the teams and the Grand Prix in Formula One.

Pirelli

It was founded in Milan in 1872 and today stands as a global brand known for its cutting-edge technology, high-end production excellence, and passion for innovation that draws heavily on its Italian roots.

With over 40 years of experience in the Premium and Prestige segment, Pirelli is a Pure Consumer Tyre Company with a particular focus on the high-value tyre market. Pirelli is constantly engaged in the development of innovative products to address the most specific mobility needs of the final Consumer, such as Specialty and Super Specialty tyres.

In the technological innovation, all of this has grown from a strong commitment to Research and Development based on an "Open Innovation" model. In 2022, Pirelli's investment in R&D stood at more than 5% of its revenues from High Value products, one of the highest levels among the world's major tyre producers. Pirelli boasts around 2,000 people engaged in R&D, located at its Milan headquarters and also across 12 local technology centers abroad, and a portfolio of more than 5,900 patents from 690 active patent families (Discover the Value of the Brand | Pirelli, n.d.).

During the race, each driver may visit his team in the pits to replace his current set of tires with a fresh set of tires, which is known as a pit stop. The tire producer of Formula One tires, Pirelli, produces five different types of dry-weather tires: ultrasoft tires, supersoft tires, soft tires, medium tires, and hard tires. These different types of tires differ in durability and grip. In general, softer compounds have more grip and lower durability, while harder compounds have less grip but higher durability. In addition, Pirelli produces two wet-weather tires, which are the intermediate tires and the wet tires. The characteristics of the different tire compounds are summarized in Table 3. Each car has thirteen sets of dry-weather tires, four sets of intermediate tires, and three sets of wet tires available during a Formula One race weekend.

The Formula One teams have access to three different compounds of the dry-weather tires. Pirelli nominates two mandatory sets for each car for the race (which can be of different

compounds) and one set of the softest compound that can only be used in the Q3 qualifying session. Usually, Pirelli chooses a ‘prime tire’ and an ‘option tire’. The prime tire is, in theory, most appropriate for the circuit’s characteristics and is normally harder than the option tire. The option tire is not expected to be as appropriate as the prime tire but may provide certain advantages in terms of pace or durability. The Formula One teams are free to choose the remaining ten sets of dry weather tires.

A decent race strategy is essential for winning races. A race strategy is determined by the choice of the tires and the laps in which the pit stops are made (Sulsters, 2018).

Compound	**Driving Conditions**	**Grip**	**Durability**
Ultrasoft	Dry	1	5
Supersoft	Dry	2	4
Soft	Dry	3	3
Medium	Dry	4	2
Hard	Dry	5	1
Intermediate	Wet (Light Standing Water)	-	-
Wet	Wet (Heavy Standing Water	-	-

Table 3 - Characteristics of the tire compounds available during the 2016 season (Sulsters, 2018)

DHL

The company DHL transports up to 1,200 tons of high-value freight per race, including race cars, engines, fuel, tires, spare parts, as well as broadcast and hospitality assets. The partnership, the longest-standing in the sport's history, has evolved to embrace green logistics, significantly contributing to Formula 1's Net Zero goal by 2030 (Formula 1® Delivered by DHL, n.d.). DHL has long been an integral part of this shipping and logistics masterpiece, ensuring that the F1 circus arrives on time and in full force, year after year.

Each race weekend, up to 1,400 tons of equipment, including three race chassis per team, are transported across continents. The F1 cars themselves are carefully loaded into bespoke containers designed to fit snugly within the cargo holds of planes, ready to be shipped across the globe. DHL employs a multi-modal approach to transport, utilizing air, sea, and land freight strategically. Air freight is crucial for time-sensitive deliveries, ensuring that essential equipment arrives on time for race weekends. Sea freight offers a more sustainable option for less time-critical cargo, particularly for long-haul journeys between continents. Land transportation provides flexibility and efficiency for shorter distances, especially during the European leg of the F1 calendar.

They use sophisticated tracking and monitoring systems to monitor shipments in real time, providing complete visibility and control over the movement of valuable F1 equipment, leverage data analytics to optimize routes, improve efficiency, and predict potential disruptions, and utilize specialized equipment and vehicles, such as the fuel-efficient Boeing 777 freighters, to transport F1 race cars and equipment. DHL also uses sustainable aviation fuel (SAF) to further reduce the environmental impact of its operations (Behind the Speed: The Technology Powering the DHL & Formula 1® Partnership, 2025).

Amazon Web Services (AWS)

Each F1 car contains 300 sensors that generate 1.1 million telemetry data points per second, transmitted from the cars to the pits. This real-time data is combined with over 70 years of historical race data stored in Amazon S3 to extract valuable insights that inform, educate, and enrich the fan experience and bring further insights into choosing the race strategy that creates winning performances on the track.

AWS's broadest and deepest functionality and unmatched pace of innovation is changing how F1 collects, analyzes, and leverages data and content to make decisions. By using AWS high-performance computing, F1 was able to run aerodynamic simulations to develop its next-generation car 70% faster than ever before, creating a car that reduces downforce loss from 50% to 15%. This dramatic reduction offers the chasing driver a higher chance of overtaking and, in doing so, offers more wheel-to-wheel action for the fans, and, with AWS, F1 has been able to turn millions of data points transmitted from cars and trackside into an engaging fan experience through its F1 Insights. By using timing data, F1 is able to create visual insights that

allow fans to objectively analyze individual team and driver performance, strategy, and tactics that will impact the overall race outcome (F1 Insights - Formula 1 Uses AWS for Sports - AWS, n.d.).

Heineken

Since 2016, Heineken has played a key role in celebrating and amplifying the spectacle of Formula 1 through a number of activities, including on-track activations, providing world-class DJs at events, and enhancing fan experiences globally. The extended partnership will usher in a new phase in Heineken and F1's relationship and focus on engaging Formula 1's growing fanbase in meaningful and creative ways, whilst also providing world-class entertainment moments, including performances from Heineken's newly announced global ambassador, Dutch superstar DJ Martin Garrix.

The Dutch beer brand will use F1's global platform to provide messaging around responsible consumption and promote Heineken 0.0 – a premium zero-alcohol product – as part of their responsible drinking program (Formula 1 and Heineken extend Global Partnership in multi-year deal, 2023).

Aramco

Aramco has been able to showcase its drive to push boundaries in fuel performance and its commitment to produce better, cleaner, and future-focused transport technology. Solutions geared not just towards sporting success but capable of tackling global environmental challenges.

The partnership extends well beyond racing, with an ongoing commitment to advance sustainable transport technologies and drive innovation in the global automotive and transport industries. Aramco is constantly developing technologies in advanced motor and vehicle technology, and they are combining the skill and experience with the talented people at AMR to create cutting-edge advancements to meet this technological challenge.

The coordinated R&D efforts on fuel-engine technology and non-metallic materials performance, will aim to improve engine performance and reduce emissions — contributing to a lower- carbon footprint in the sport, whilst enhancing safety and efficiency and the engineers

and chemists will focus on the production of ultra-efficient hybrid internal combustion engines and advanced fuels, including lower carbon synthetic or E-Fuels, for deployment in motorsport (The Aramco and Aston Martin Racing Strategic Partnership, n.d.).

Lenovo

Precision engineering and boundary-breaking technology have always been at the heart of Formula 1. “Innovation is embedded in everything we do,” explains Pete Samara, Director of Strategic Technical Ventures at Formula 1. “From the car to the track, to the broadcast and digital products, innovation has to be at the heart of everything we do every single day.”

To keep the organization’s many moving parts running smoothly, the experts at Formula 1 partnered with Lenovo for an IT infrastructure that can withstand the breakneck pace of innovation. One of the major IT challenges Formula 1 faces is the sheer volume of data generated by the organization. Not only does F1 have all the data concerns of a globe-spanning company and sports organization, but each individual car is also generating millions of points of data across 22 Grands Prix around the world. Formula 1 acquires lots of data from the cars, like the G-forces drivers hit rounding a corner, the steering angle, the brake, how much the driver is pushing the throttle, and all the audio and video from the cameras and microphones.

Lenovo tech infrastructure helps put that data in the hands of the drivers and their teams instantly, through trackside devices, and supports data collection with its servers (The Winning Formula | Lenovo GB, n.d.).

Crypto.com

Crypto.com serves over 10 million customers with the world’s fastest-growing cryptocurrency and financial services platform. It is built on a foundation of security, privacy and compliance and is the first cryptocurrency company in the world to have ISO/IEC 27701:2019, ISO27001:2013 and PCI:DSS 3.2.1, Level 1 compliance, and independently assessed at Tier 4, the highest level for both NIST Cybersecurity and Privacy Frameworks, as well as Service Organization Control (SOC) 2 compliance.

F1 fans will already be familiar with the logos of Crypto.com, as the world’s fastest-growing cryptocurrency platform became a Global Partner of Formula 1® in 2021, sponsoring

the thrilling Sprint series. With over 10 million users worldwide, Crypto.com is committed to building the future of the internet, Web3. Powered by cryptocurrency, Web3 will be more fair and equitable, owned by the builders, creators, and users (Crypto.com Announced as Official Title Partner of the Formula 1 Crypto.com Miami Grand Prix, n.d.).

Salesforce

Salesforce is the world's leading customer relationship management technology, helping build and improve customer relationships. It helps to stay ahead of changing customer expectations with data tools, trusted AI, and best-in-class apps for sales, service, marketing, commerce, and IT — all on one integrated platform. With Salesforce, the employees can be more productive with a single view of customer data that keeps every team in sync. And Agentforce works side-by-side with humans, speeding up processes and taking action autonomously. All so they can win more business, while making the existing customers happier with personalized experiences (What Is Salesforce?, n.d.).

Formula 1® and McLaren F1® Team turbocharge fan engagement and drive new sales growth with Agentforce, our deeply integrated AI platform that delivers personalized, 24/7 support and experiences. Agentforce unifies data, cuts F1® response times by 80%, and tailors every touchpoint, from first looks to finish line and beyond (Salesforce and F1 Form a Global Partnership, n.d.).

Puma

Since the mid-1980s, PUMA has pioneered motorsport clothing, developing fireproof overalls, race shoes and other high-performance racing gear, as well as teamwear, fan wear, and lifestyle collections for some of the leading teams in motorsport. This partnership will make PUMA an official supplier at Formula 1 races, granting the brand the right to produce F1-branded apparel, footwear, and accessories. The deal will see PUMA create a new collection of fanwear for the sport's rapidly growing and diverse fan base and supply uniforms to all F1 personnel at the circuit from 2024 (PUMA to become Official F1 Provider in new multi-year partnership, 2023).

Mercedes-Petronas

Since 2010, PETRONAS has been the Title and Technical Partner to the Mercedes-AMG PETRONAS Formula One Team, providing Fluid Technology Solutions™ that have powered the team throughout eight consecutive World Constructors' Championships (2014-2021) and seven consecutive Drivers' Championships (2014-2020).

The Mercedes-AMG PETRONAS Formula One cars serve as the ultimate testing ground for our passenger car solutions. The advanced technologies used in these race cars are constantly being applied to lubricants for road cars, delivering maximum power efficiency and reducing emissions. PETRONAS Trackside Fluid Engineers conduct on-site performance analysis of the engine oils within the Mercedes-AMG PETRONAS Formula One Team power unit, providing the team with real-time input about the health of the engine's mechanical parts. They operate a compact lab for fluid-related service activities at race events around the world alongside the best engineers and scientists in the industry (Mercedes-AMG PETRONAS Formula One Team | PLI PETRONAS, n.d.).

Möet Hennessy

Moët & Chandon, Krug, Veuve Clicquot, Hennessy, Château d'Yquem, Glenmorangie and Colgin all figure among the LVMH Group's world-renowned wines and spirits houses. Grouped within Moët Hennessy, these exceptional champagnes, spirits, and wines from around the world comprise a collection of rare brands where heritage and innovation, authenticity and creativity converge (Wines and Spirit, s.d.).

Since 2025, LVMH has been a global luxury partner of Formula 1® under a 10-year agreement involving several iconic LVMH Maisons: Louis Vuitton, Moët Hennessy, and TAG Heuer. At the crossroads of the LVMH Group's values of creativity and excellence with Formula 1®'s innovation and high-performance, the partnership brings together the best of these two worlds and provides unparalleled experiences combining thrilling sport and elegant art-de-vivre, wheel-to-wheel racing and time-tested craftsmanship, for enthusiasts, fans and clients (LVMH X Formula 1® - LVMH, n.d.).

Santander

The partnership will reflect the shared commitment to innovation between the two companies and a focus on delivering unrivalled experiences for their respective fans and customers on a global scale.

Building on a strong foundation in Formula 1 that dates back to 2006, Santander will feature on trackside signage at a number of Grands Prix and provide Formula 1 fans with exclusive content and activations throughout the partnership. The new deal also includes Santander's Openbank, Europe's largest 100% digital bank by deposits, which will launch in the US later this year. F1 will use its growing presence and fanbase in the US to support the digital bank's expansion throughout the life of the partnership (Formula 1 announces Santander as Official Retail Banking Partner, 2024).

Oracle

The championship-winning Oracle Red Bull Racing team relies on Oracle Cloud to drive race strategy, engine development, fan engagement, and more. It can power your business's AI, data, and apps using the same cloud that Oracle Red Bull Racing uses. The team ran more than 150 billion race-strategy simulations on Oracle Cloud Infrastructure (OCI) in the 2024 season, helping give the drivers their best chances to win (Oracle Red Bull Racing, n.d.).

Oracle Red Bull Racing and Neat, the pioneering leader in world-class video technology, are proud to announce a new multi-year partnership naming Neat as the team's exclusive Video Conferencing Hardware and Innovation Partner (Oracle Red Bull Racing, n.d.-b).

5. Methodology

Financial variables needed

For this paper, it is being conducted an analysis of the stock market of a 50-day window starting 25 trading days before and ending 25 trading days after each sponsorship announcement (Abril et al., 2017).

During this timeframe and after the information on the stock price and the market index is retrieved, the following metrics are calculated: actual returns, expected returns, abnormal returns, and cumulative abnormal returns.

The actual returns (1) are the daily percentage changes in stock prices and in the market index, and the formula is:

$$\boldsymbol{R_t = \frac{P_t - P_{t-1}}{P_{t-1}}} \quad (1)$$

Where:

- Pt = adjusted closing price on day t,
- Pt−1 = adjusted closing price on previous day,
- Rt = actual returns

The formula for the expected return for a stock using the Market Model (Linear Regression) is:

$$\boldsymbol{E(R_{i,t}) = \alpha + \beta R_{m,t}} \quad (2)$$

Where:

- Rm,t = market return at time t,
- α *and* β = regression coefficients (from the regression of the companies' returns on the market returns),
- E(Ri,t) = expected return.

The abnormal returns are the difference between actual returns and expected returns, with the formula:

$$\boldsymbol{AR_{i,t}c = R_{i,t} - E(R_{i,t})} \quad (3)$$

Where:

- ARi,t = abnormal returns
- Ri,t = actual returns
- E(Ri,t) = expected returns

The Cumulative Abnormal Returns (CAR) is the sum of abnormal returns over a time window, with the formula (4) (Abril et al., 2017):

$$\boldsymbol{CAR_i(T1, T2) = \sum_{t=T_1}^{T_2} AR_{i,t}} \quad (4)$$

Sponsorship dates

After all the sponsorship companies were chosen, the sponsorship dates had to be searched and divided between new sponsorships and renewals of contracts. Then the 50-day window was calculated, the stock prices and market index were searched on Bloomberg and Yahoo Finance according to the tickers listed below, in parentheses, and the expected returns, abnormal returns, and CAR were calculated.

Pirelli - Pirelli & C. S.p.A (PC IM) - Before 2015

Pirelli - Pirelli & C. S.p.A. (PIRC.MI)/ market index – (^FTSEMIB.MI) – After 2015

- 23rd June 2010 (29th May 2010 – 18th July 2010)
- 20th December 2013 (25th November 2013 – 14th January 2014)
- 5th October 2018 (10th September 2018 – 30th October 2018)
- 5th March 2021 (8th February 2021 – 30th March 2021)

DHL – (DHL.DE)/market Index – (^GDAXI)

- 27th February 2004 (new sponsorship) - (2 FEB 2004 – 23 MARCH 2004)

- 15th March 2018 (renewal) - (18 FEBRUARY 2018 – 9 APRIL 2018)
- 15th March 2021 (renewal) – (18 FEBRUARY 2021 – 9 APRIL 2021)
- 27th February 2024 (renewal) – (2 FEBRUARY 2024 – 23 MARCH 2024)

Amazon Web Services (AWS) - Amazon.com, Inc. (AMZN)/ market index – (^IXIC)

- 29th June 2018 (new sponsorship) – (4 JUNE 2018 – 24 JULY 2018)
- 3rd November 2022 (renewal) – (9 OCTOBER 2022 – 28 NOVEMBER 2022)

Heineken - Heineken N.V. (HEIA.AS)/ market index – (^AEX)

- 9th June 2016 (new sponsorship) – (15 MAY 2016 – 4 JULY 2016)
- 31st May 2023 (renewal) – (6 MAY 2023 – 25 JUNE 2023)

Aramco - Saudi Arabian Oil Company (2222.SR)/ market index – (^TASI.SR)

- 10th March 2020 (new sponsorship) – (14 FEBRUARY 2020 – 4 APRIL 2020)

Lenovo – LENOVO GROUP (0992.HK)/ market index – (^HSI)

- 10th March 2022 (new sponsorship) – (APR 4, 2022 - FEB 13, 2022)
- 5th September 2024 (Global Partner) – (AUG 11, 2024 - SEP 30, 2024)

Crypto.com - Cronos USD Price (CRO-USD)/market index - Bitcoin USD Price (BTC-USD)

- 29th June 2021 (Global partner) – (JUN 4, 2021 - JUL 24, 2021)
- 19th December 2024 (renewal) – (NOV 24, 2024 - JAN 13, 2025)

Salesforce - Salesforce, Inc. (CRM)/ market index – (^GSPC)

- 5th April 2022 (new sponsorship) – (MAR 11, 2022 - APR 30, 2022)

Puma - PUMA SE (PUM.DE) / market Index - DAX P (^GDAXI)

- 2nd May 2023 (new sponsorship) – (APR 7, 2023 - MAY 27, 2023)

Mercedes-Petronas - Mercedes-Benz Group AG (MBG.DE)/market index - DAX P (^GDAXI)

- 21st Dec 2009 (new sponsorship) – (NOV 26, 2009 - JAN 15, 2010)
- 24th May 2014 (renewal) – (APR 29, 2014 - JUN 18, 2014)
- 28th Sep 2022 (renewal) – (SEP 3, 2022 - OCT 23, 2022)

Moët Hennessy - LVMH Moët Hennessy - Louis Vuitton, Société Européenne (MC.PA) / market index – (CAC 40)

- 2nd October 2024 (new sponsorship) – (SEP 7, 2024 - OCT 27, 2024)

Santander - Banco Santander, S.A. (SAN.MC) / market Index - IBEX 35 (^IBEX)

- 15th June 2006 (title sponsor of race) – (MAY 21, 2006 - JUL 10, 2006)
- 11th October 2006 (McLaren Mercedes sponsorship) – (SEP 16, 2006 - NOV 5, 2006)
- 8th September 2009 (Ferrari sponsorship) – (AUG 14, 2009 - OCT 3, 2009)
- 21st December 2021 (New partnership with Ferrari) – (NOV 26, 2021 - JAN 15, 2022)

Oracle – Oracle Corporation (ORCL) / Market Index – S&P 500Index (^GSPC)

- 26th March 2021 (new sponsorship) – (MAR 1, 2021 - APR 20, 2021)
- 9th February 2022 (title partner) – (JAN 15, 2022 - MAR 6,2022)

(Formula 1 Partners, 2025)

The methodology used for this research was the event study, which measures the impact of the F1 races and sponsorship announcements. This requires the application of specific steps to estimate the abnormal returns that arise in response to sponsorship announcements in the company studied, Pirelli (Johnston, 2010; MacKinlay, 1997; Cram, 1997).

The sample was comprised of the 13 companies that sponsor Formula One, going from Pirelli, Oracle, Santander, DHL, and even AWS, during a 20-year period (2004 to 2024), where it was looked into all the races in a race year and, in each year, which sponsors were sponsoring each team. After that, it was narrowed down to common sponsors. Following this process, it was searched for the years in which each sponsorship was announced or renewed.

As recommended by previous authors (Brown and Warner, 1985), the date on which each sponsorship was announced was carefully identified according to newspapers and the Formula One official website. Announcement dates ranged from the first announcement on the 27th February 2004, from the company DHL, to the last announcement on the 19th December 2024 from Crypto.com (Srinivasan and Bharadwaj, 2004).

This study analyzes a 50-day window, starting 25 days prior to the sponsorship announcement date and ending 25 days after the same date. The length of this window is consistent with other sponsorship event studies (e.g., 51 days in Cornwell et al., 2005; 41 days in Samitas et al., 2008, and Clark et al., 2009).

Announcement windows were designed to capture the full effect of the sponsorship announcement. They generally included several days surrounding the actual announcement date. Windows should capture the effects of information leakages prior to the announcement's official release, as well as any delays in price effects (Srinivasan and Bharadwaj, 2004).

To estimate the normal returns, the most common approaches are the two-step market model, the constant mean-return model (MacKinlay, 1997), and the CAPM (Capital Asset Pricing Model). In this research, the data encompasses the firm's stock prices and a market index, rendering the market model the most suitable option. To isolate changes related to announcements, a market model would properly eliminate these effects. This model relates the expected return of a given stock to the return of the market portfolio through an appropriate market index. For each sponsor, the reference index was the company's home exchange index, which was used as the stock market proxy. The event-study technique involves estimating a time series of expected or normal stock returns, then comparing them with the actual stock returns over the same period of time to arrive at an estimate of the unexpected or abnormal returns associated with a particular event (Srinivasan and Bharadwaj, 2004).

The expected returns and the abnormal returns were calculated for every day in the announcement window. Next, they were averaged across the total number of announcements to provide cumulative abnormal returns for each of the sponsorship announcements investigated (Abril et al., 2017).

In keeping with the event-studies literature, tests were performed for specified multiple-day time intervals (5 days before and 5 days after), particularly the days immediately

surrounding the announcement, to check whether the abnormal returns differ significantly across time or groups. In line with previous research (Johnston, 2010), the hypotheses were tested in relation to the variables with separate analyses of variance (ANOVAs) (Walraven et al., 2012) in which, if the null hypothesis is rejected then at least one group is significantly different from the others and if the null hypothesis is not rejected then there is no significant difference in abnormal returns between periods.

Furthermore, to analyze and better interpret the data, the analytical tools provided by the SPSS program were also used (Elsayed, 2025).

6. Obtained Results, Findings and Discussion

This study analyzed the value-creation effect of the announcements of 29 global official sport sponsorships over a time span of 20 years. The time frame of this research allowed the author to extract some relevant contributions. After calculating the returns before and after, the author was able to calculate the abnormal returns, expected returns, and CAR, within the 25 days before and after the sponsorship announcement date, which then led to the creation of the following figures.

From the company Pirelli, in the years 2010, 2014, 2018, and 2021:

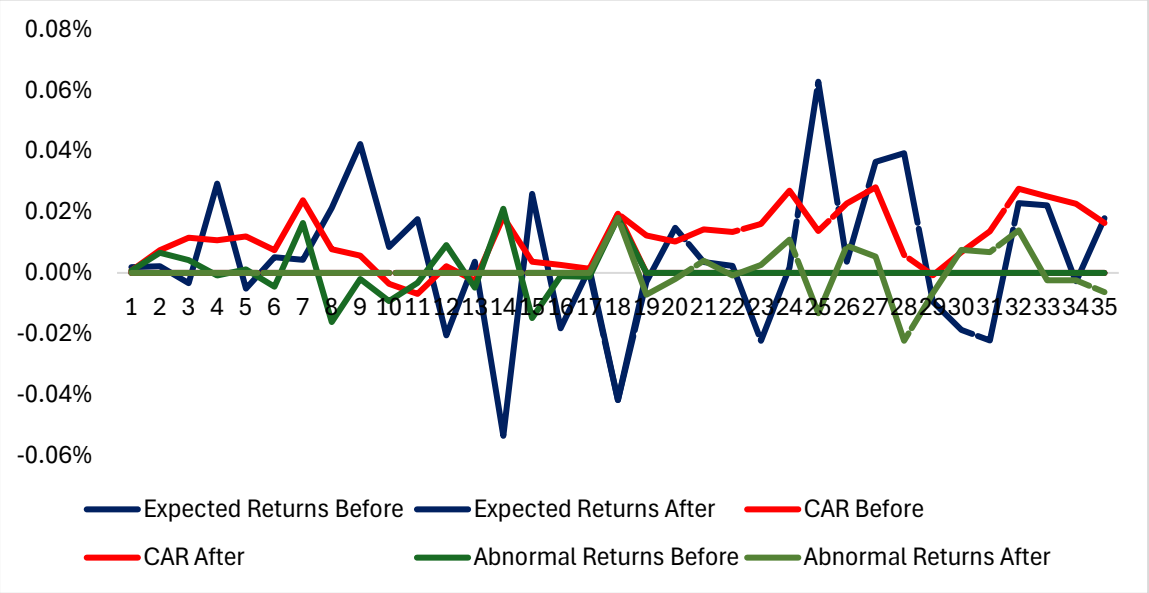

Figure 2 - Pirelli 2010

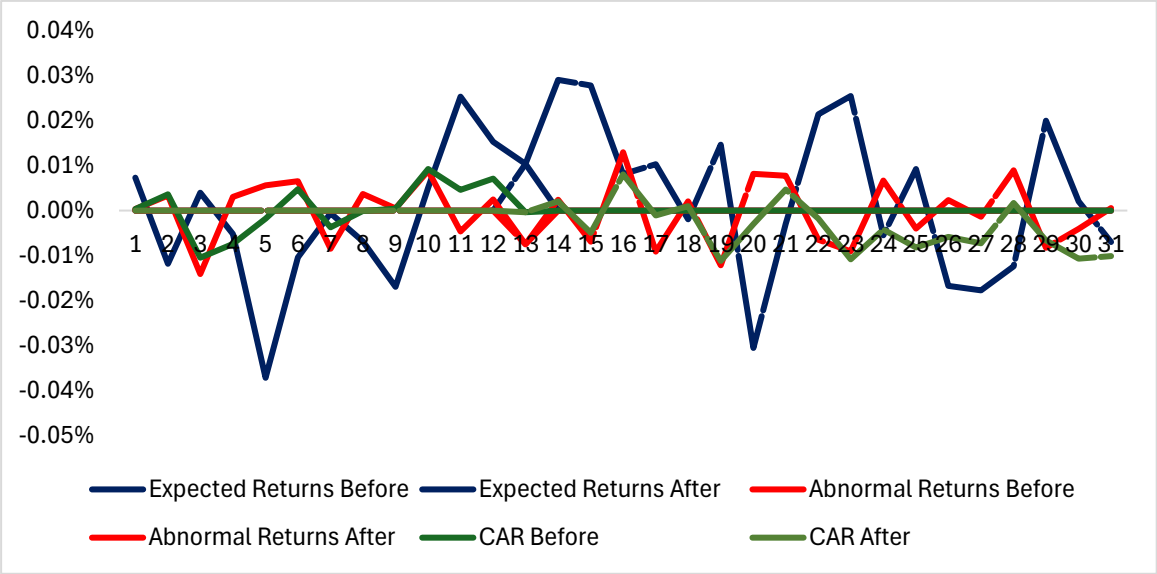

Figure 3 - Pirelli 2014

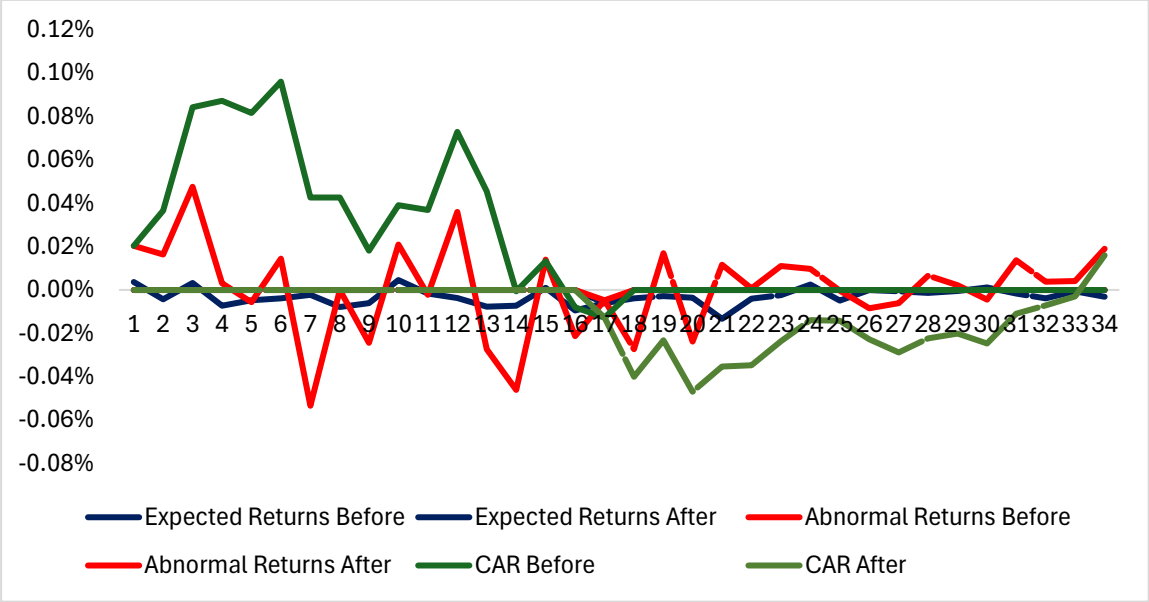

Figure 4 - Pirelli 2018

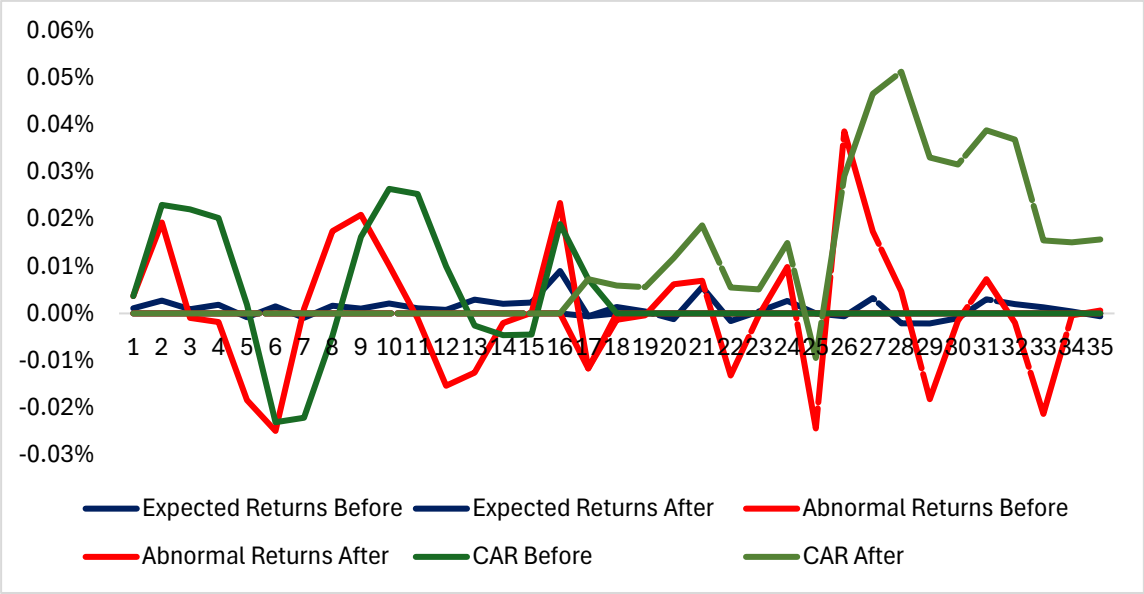

Figure 5 - Pirelli 2021

According to the research, the impact of the previous incidents (Figures 2 and 3) was less pronounced, with just slightly abnormal returns. However, the CAR lines show a noticeable rising trend by 2018 and 2021 (Figures 4 and 5), indicating that investors increasingly came to consider the announcements or sponsorships as being beneficial for the business. It shows that Pirelli's brand investments are increasingly seen as strategically valuable.

For the company DHL in the years 2004, 2018, 2021, and 2024:

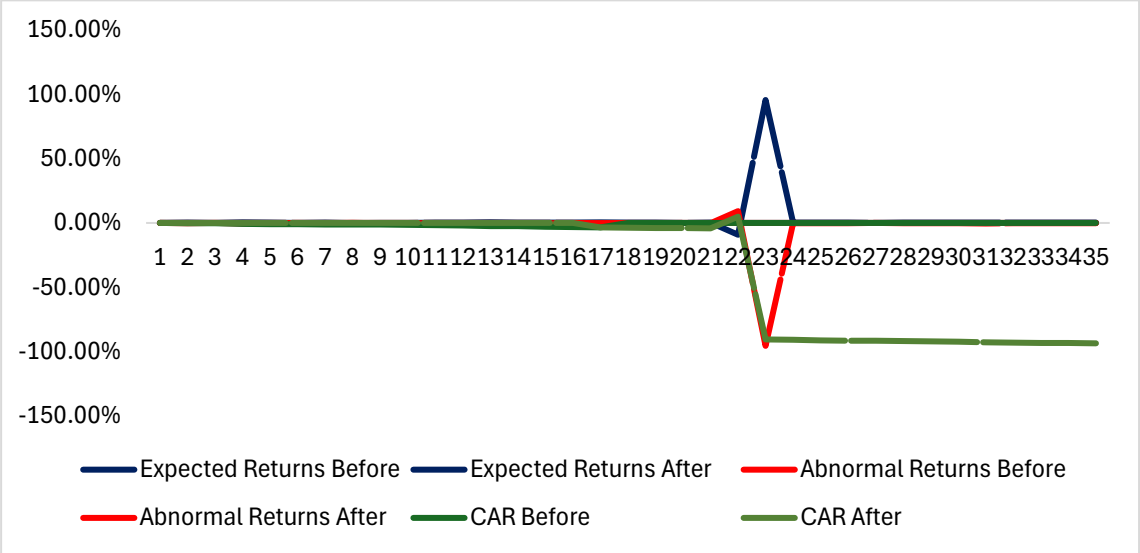

Figure 6 - DHL 2004

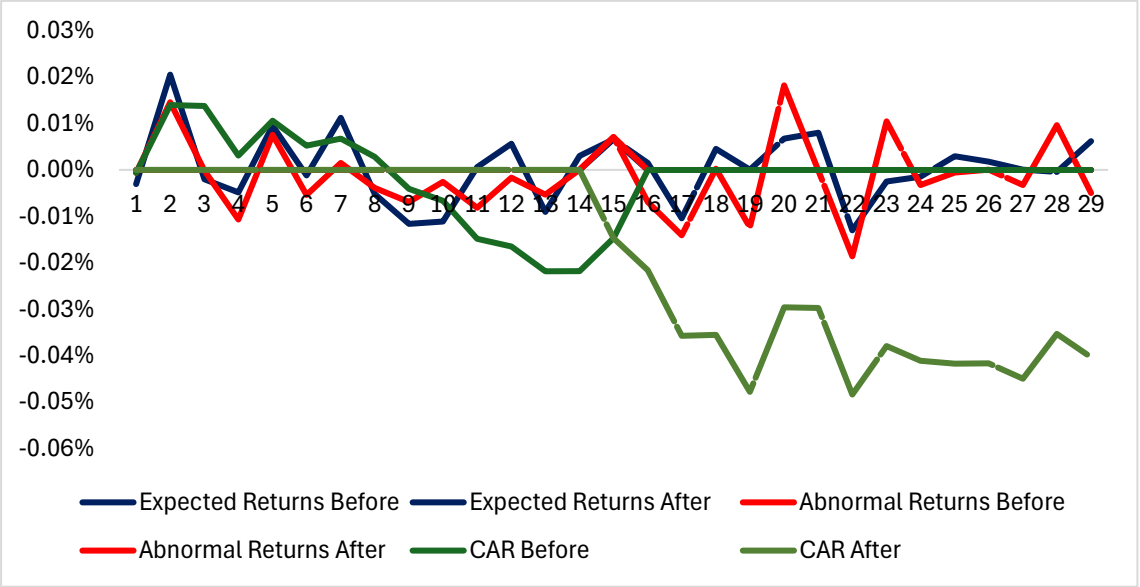

Figure 7 - DHL 2018

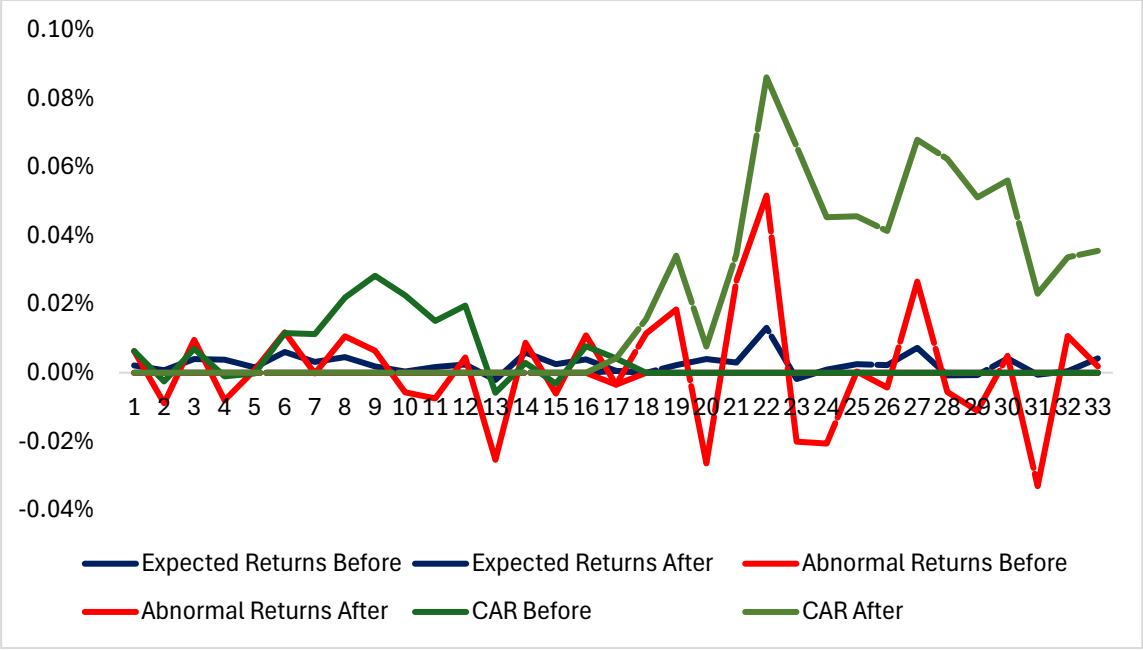

Figure 8 - DHL 2021

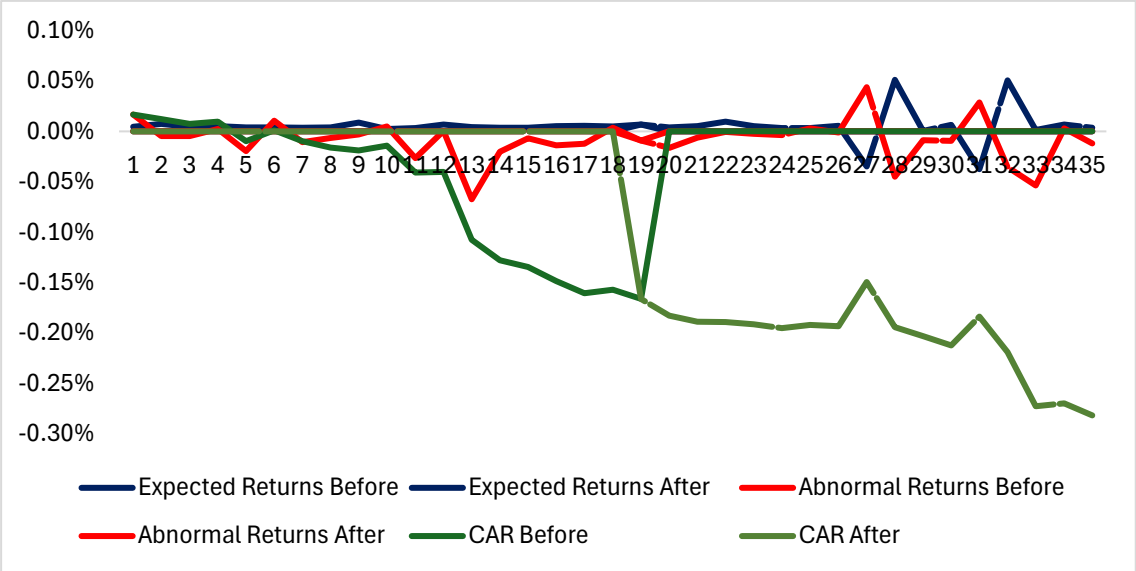

Figure 9 - DHL 2024

The earlier year, 2004 (Figure 6), indicates that markets were not severely impacted because there is hardly any difference between expected and abnormal returns. However, there is a surprisingly favorable response in 2018 (Figure 7): abnormal returns increase and the CAR rises, indicating substantial investor support. The effect becomes more consistent by 2021 (Figure 8), with fewer surprises, and the CAR starts to decline significantly in 2024 (Figure 9), suggesting that people may be cautious of DHL's more recent efforts.

For the Company Amazon Web Services (AWS) in the years 2018 and 2022:

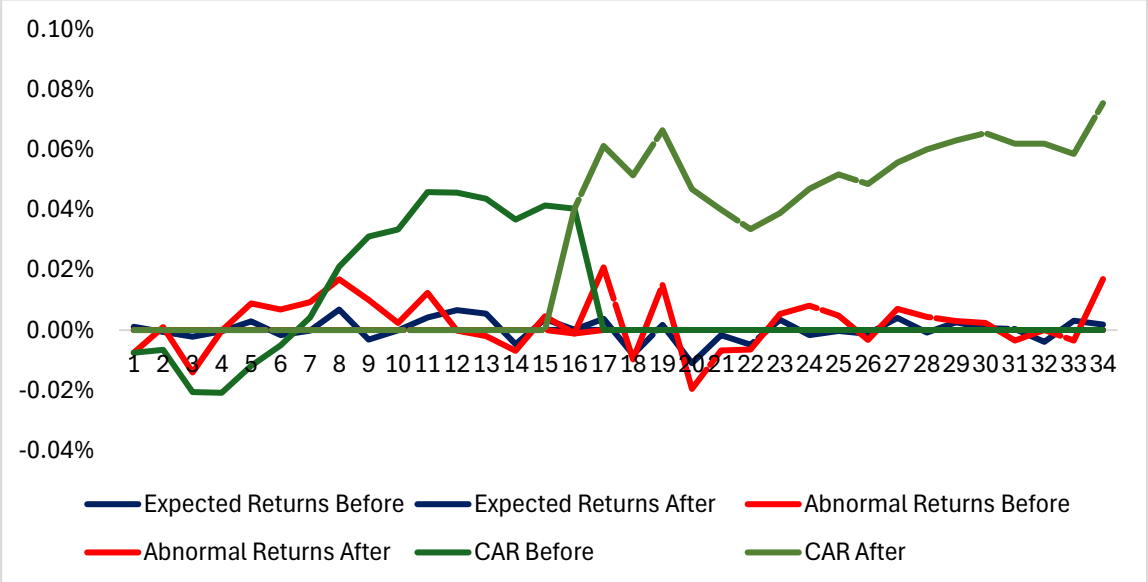

Figure 10 - AWS 2018

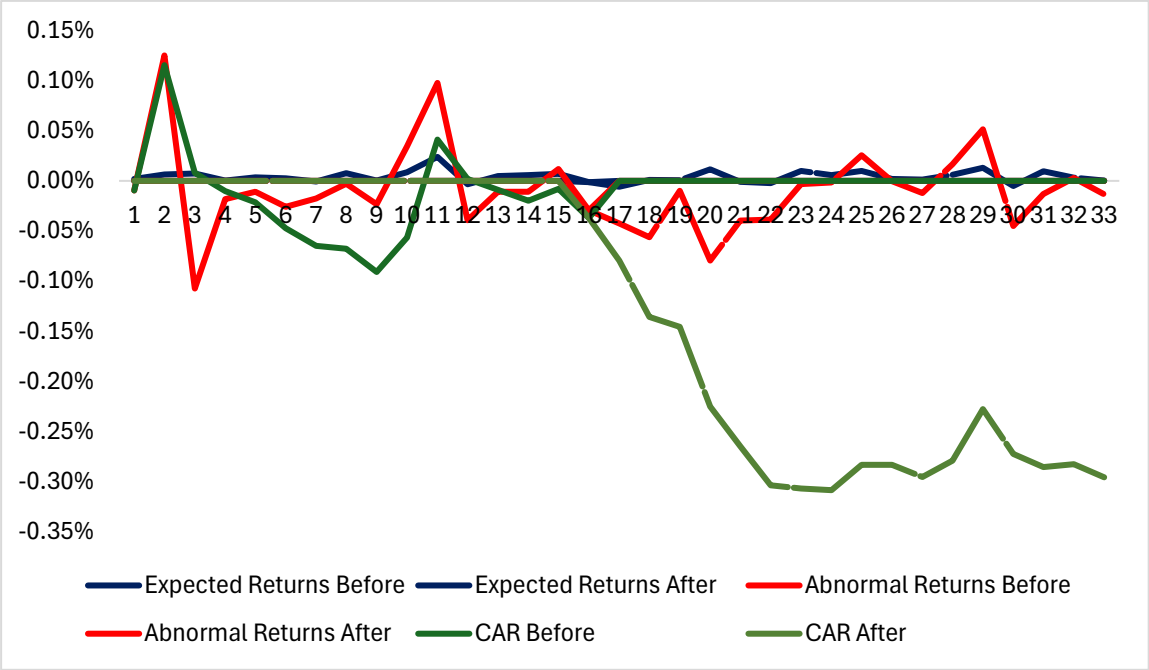

Figure 11 - AWS 2022

Investors were obviously impressed by the 2018 event (Figure 10), which resulted in positive abnormal returns and a growing CAR. However, the effect dropped by 2022 (Figure 11), which suggests that investors may have already anticipated AWS's dominance, so announcements didn't inspire much new optimism.

For the company Heineken in the years 2016 and 2023:

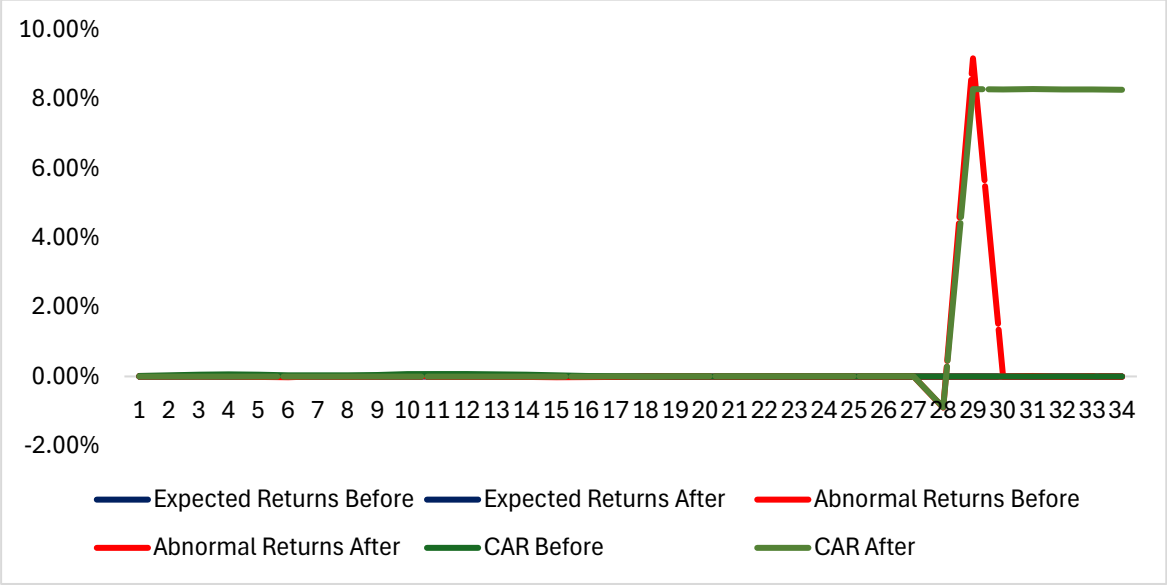

Figure 12 - Heineken 2016

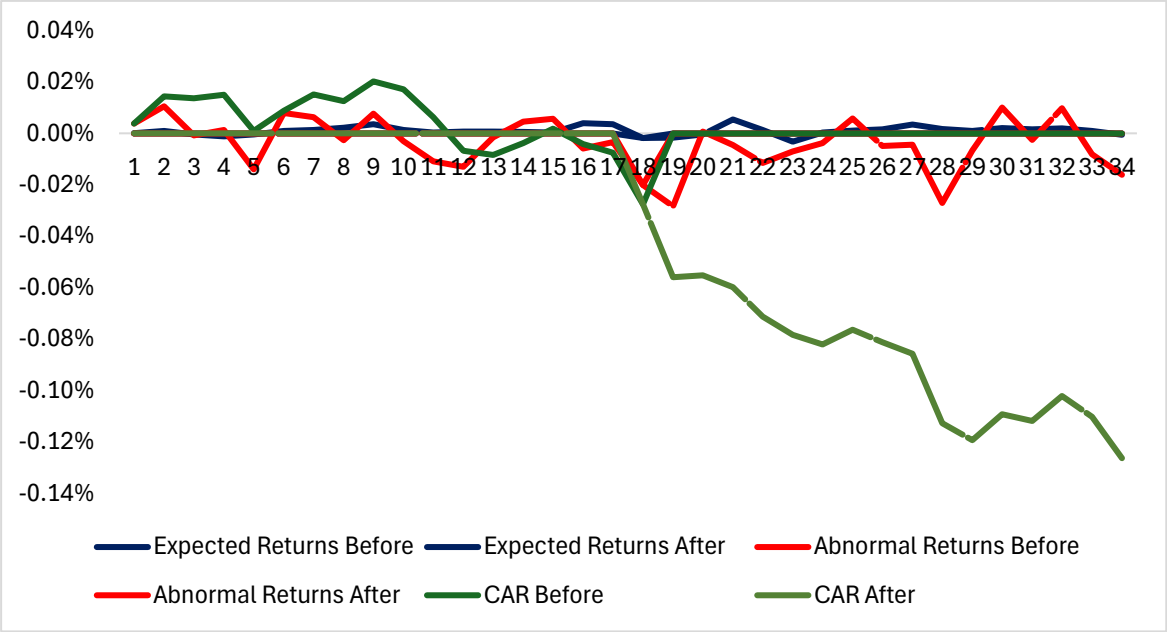

Figure 13 - Heineken 2023

The markets likely viewed 2016's abnormal returns as a positive development, given their positive and long-lasting nature (Figure 12). But by 2023, CAR is more unpredictable (Figure 13). This could indicate that at the time, investors were less certain about Heineken's sponsorship initiatives or strategic positioning.

For the company Aramco in the year 2020:

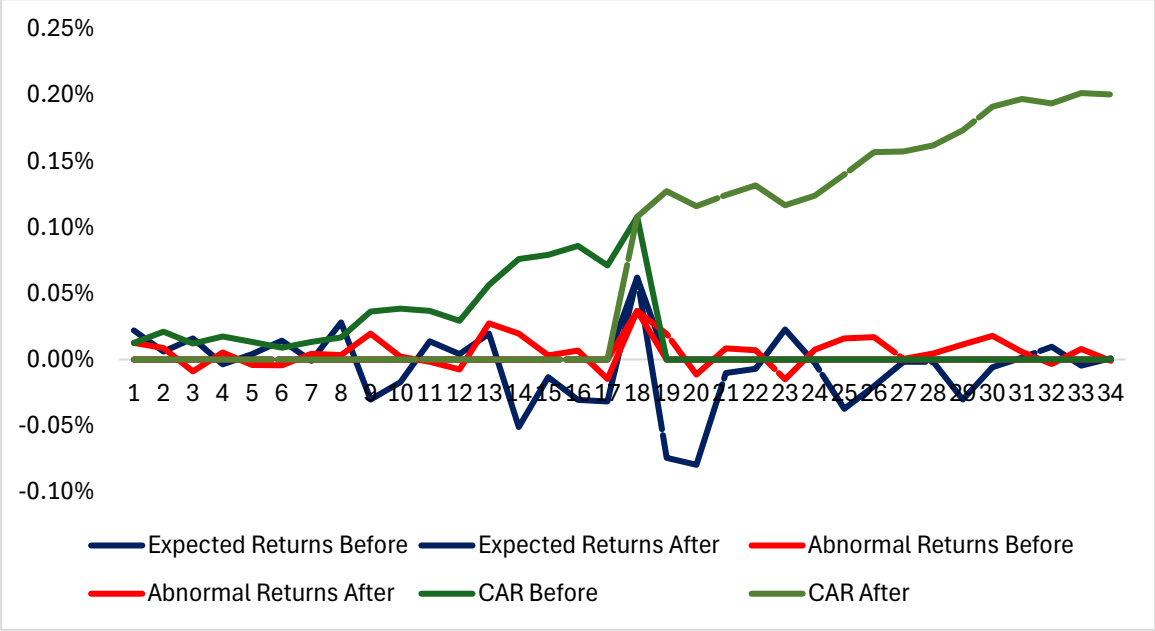

Figure 14 - Aramco 2020

At first, the reaction appears negative, with abnormal returns declining, but over time, CAR becomes higher. This illustrates the first uncertainty of investors.

For the company Lenovo in the years 2022 and 2024:

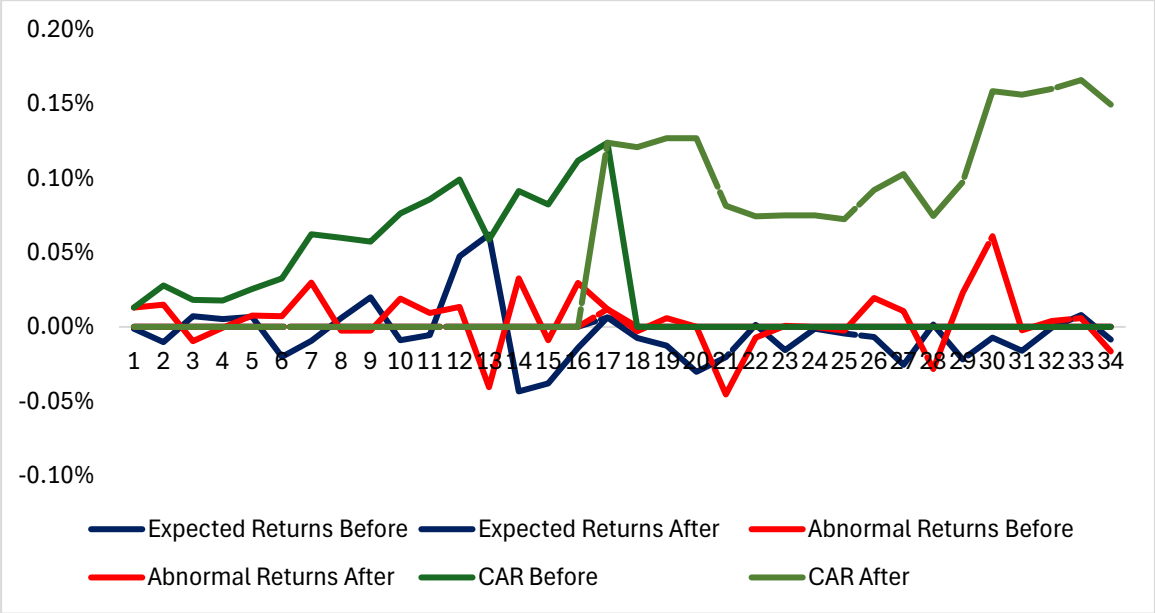

Figure 15 - Lenovo 2022

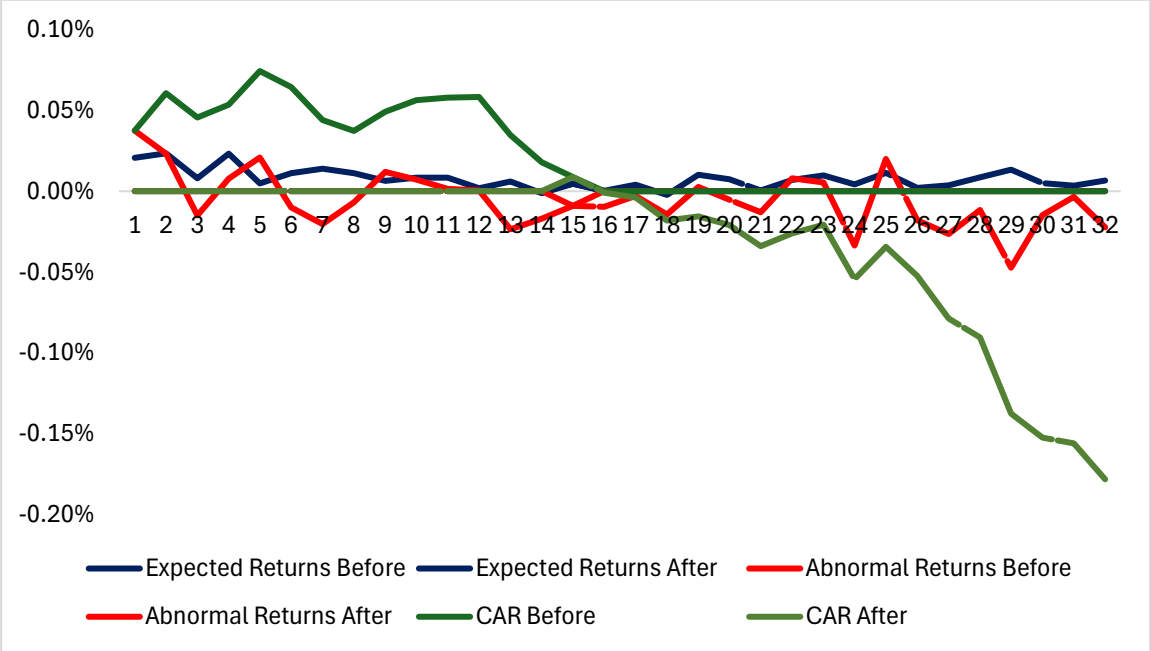

Figure 16 - Lenovo 2024

Lenovo's 2022 event showed almost no exceptional results and was essentially neutral (Figure 15). However, the CAR trend is negative by 2024, indicating that the market did not see favorable improvements (Figure 16).

For the company Crypto.com in the years 2021 and 2024:

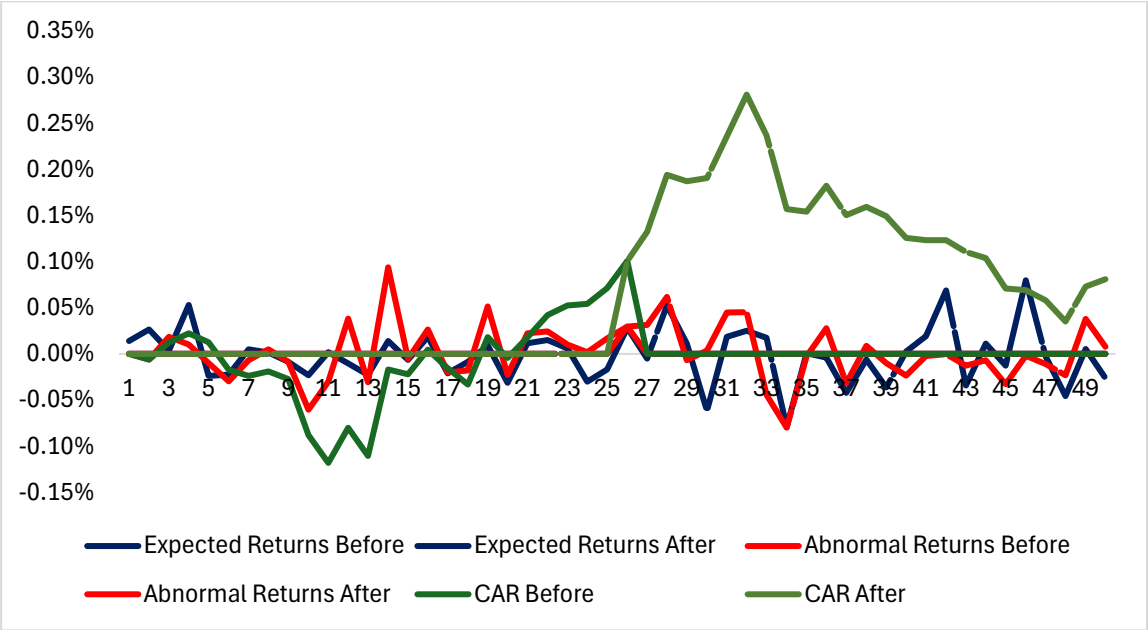

Figure 17 - Crypto.com 2021

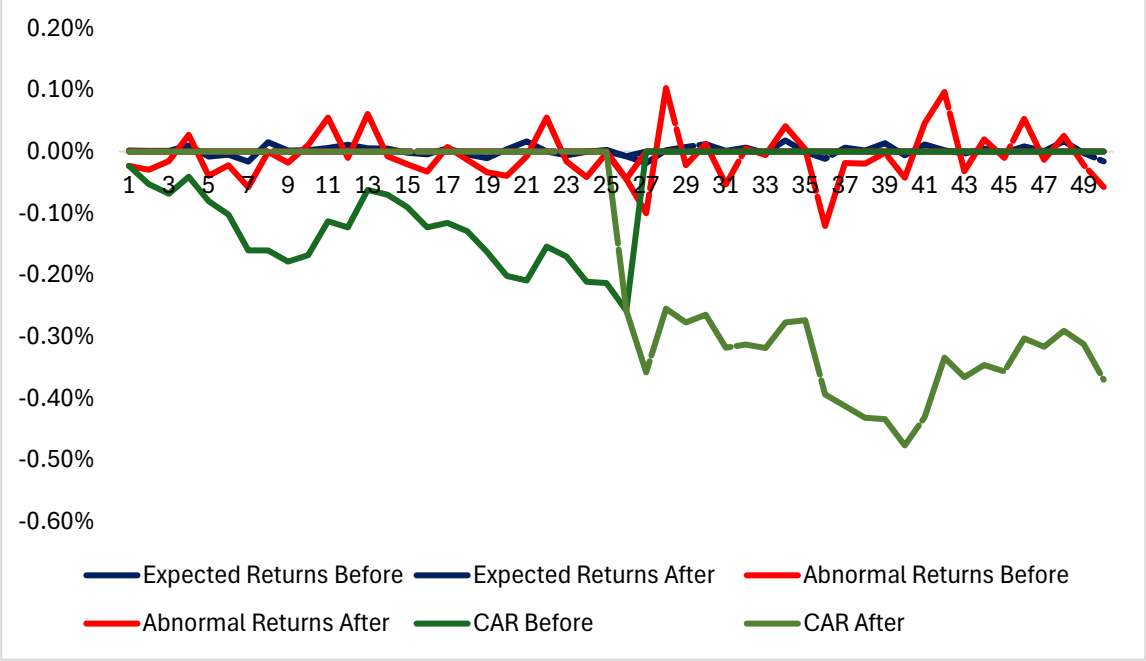

Figure 18 - Crypto.com 2024

Abnormal returns changed a lot in 2021 (Figure 17), which is indicative of the urgency and unpredictability that characterize the world of digital currencies. By 2024, the CAR trend is negative, indicating a decline in confidence and possible challenges to sponsorship expenses due to the volatility of the cryptocurrency market (Figure 18).

For the company Salesforce in the year 2022:

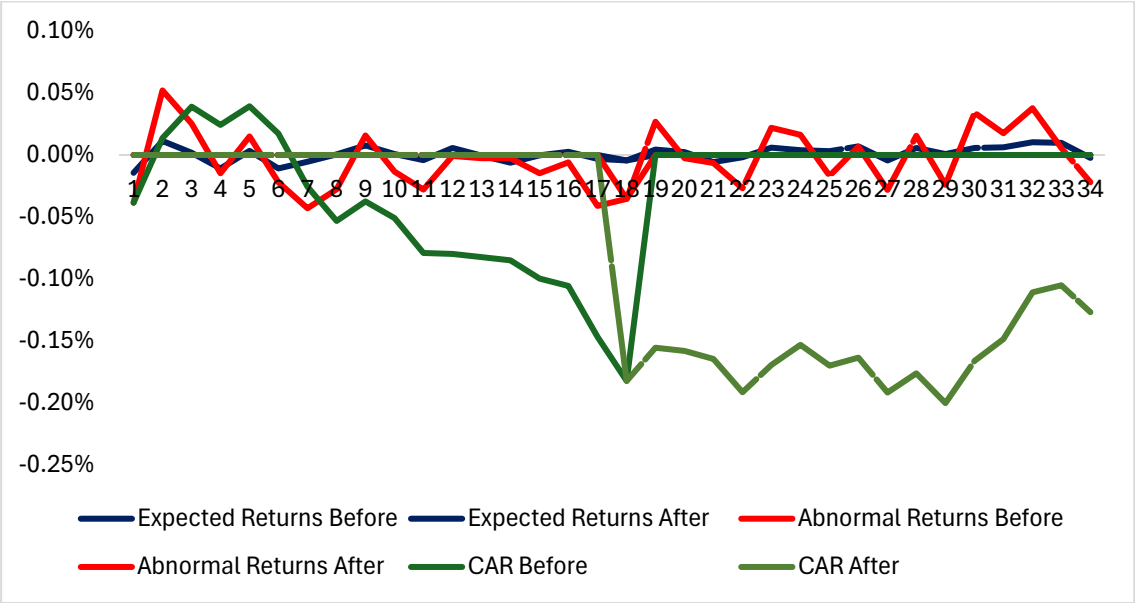

Figure 19 - Salesforce 2022

The market's reaction was neutral; the CAR is flat and decreasing, and the expected and abnormal returns almost overlap.

For the company Puma in the year 2023:

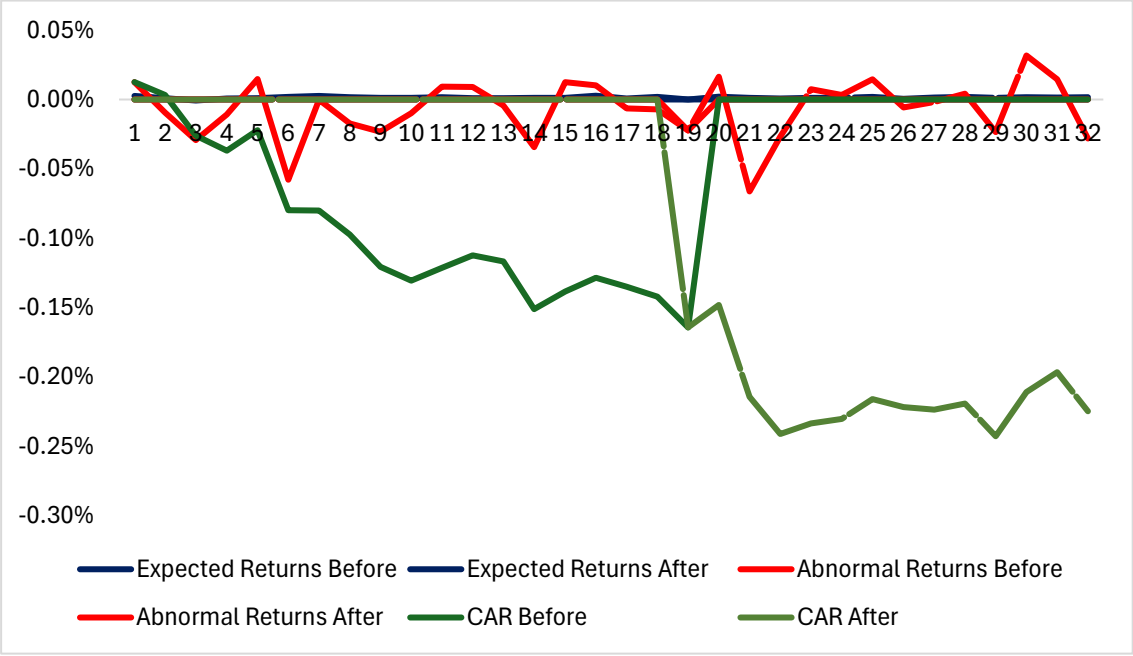

Figure 20 - Puma 2023

The market's reactions are neutral, and the CAR is decreasing consistently.

For the company Mercedes-Petronas in the years 2009, 2014, and 2022:

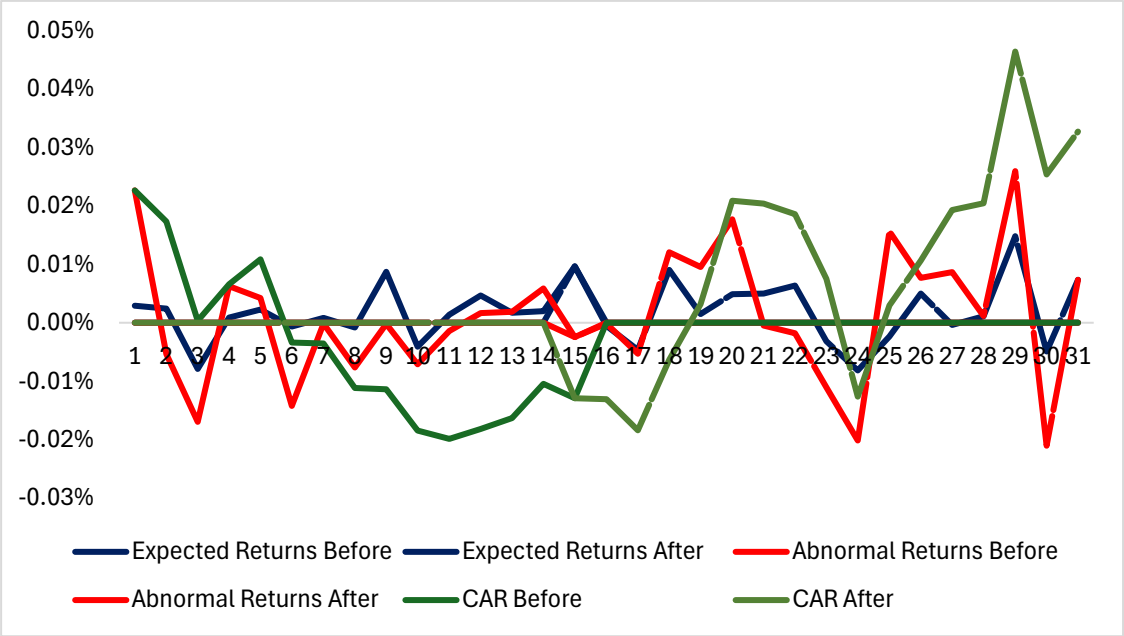

Figure 21 - Mercedes-Petronas 2009

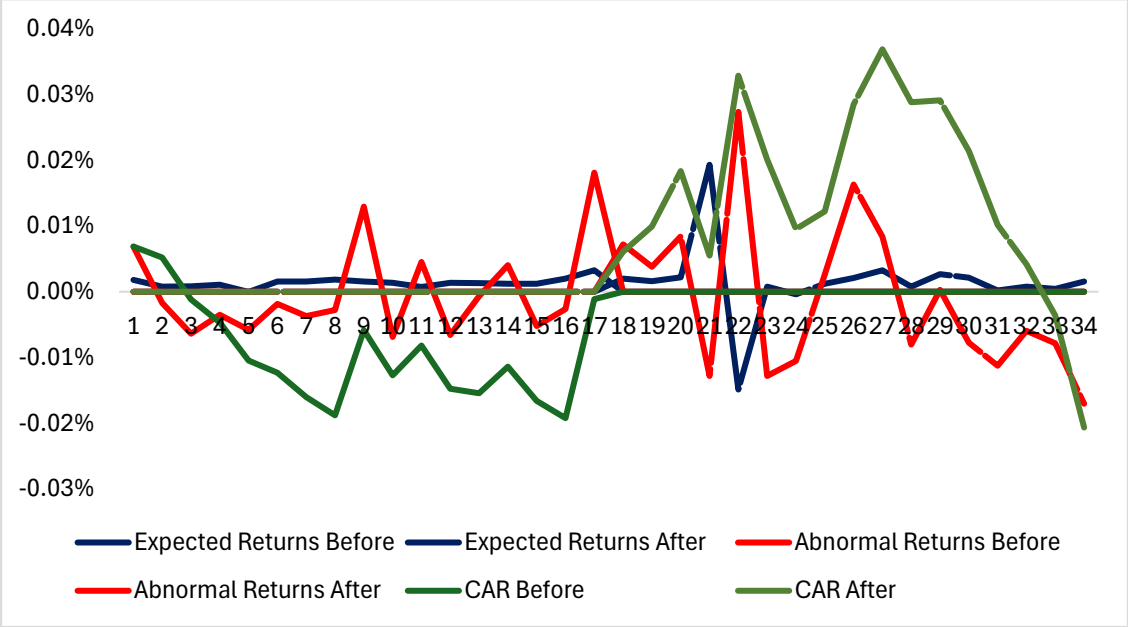

Figure 22 - Mercedes-Petronas 2014

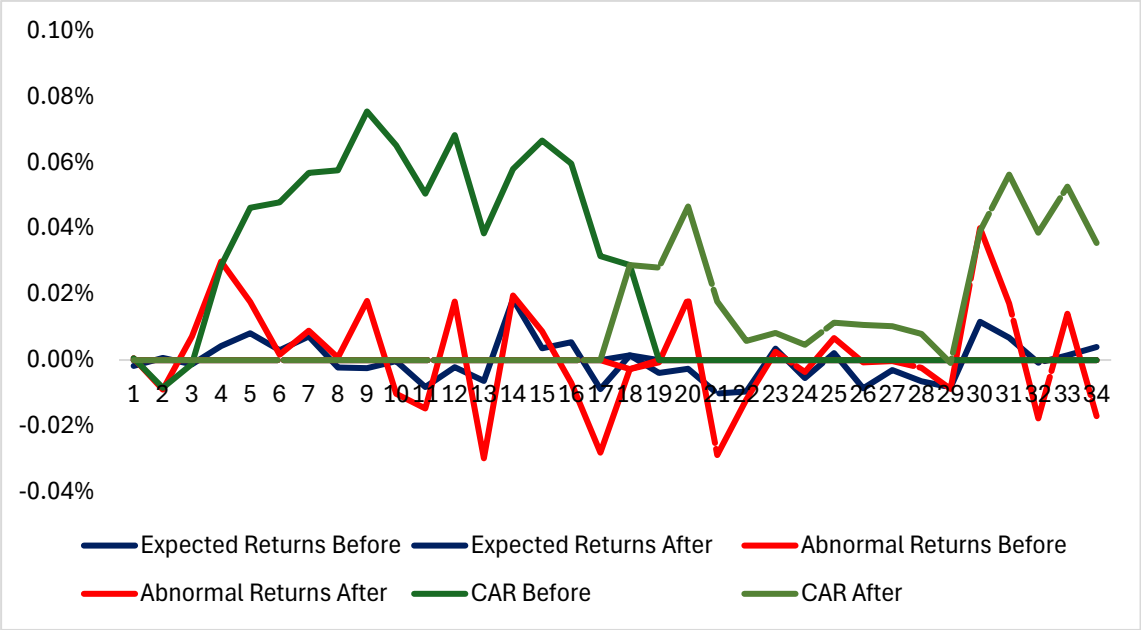

Figure 23 - Mercedes-Petronas 2022

By 2014, the CAR is significantly positive, indicating that investors valued the partnership or visibility (Figure 22), whereas in the initial year, in 2009 (Figure 21), it shows essentially little unusual influence. Results by 2022 are inconsistent: CAR settles as being positive, and abnormal returns fluctuate (Figure 23).

For the company Moët Hennessy in the year 2024:

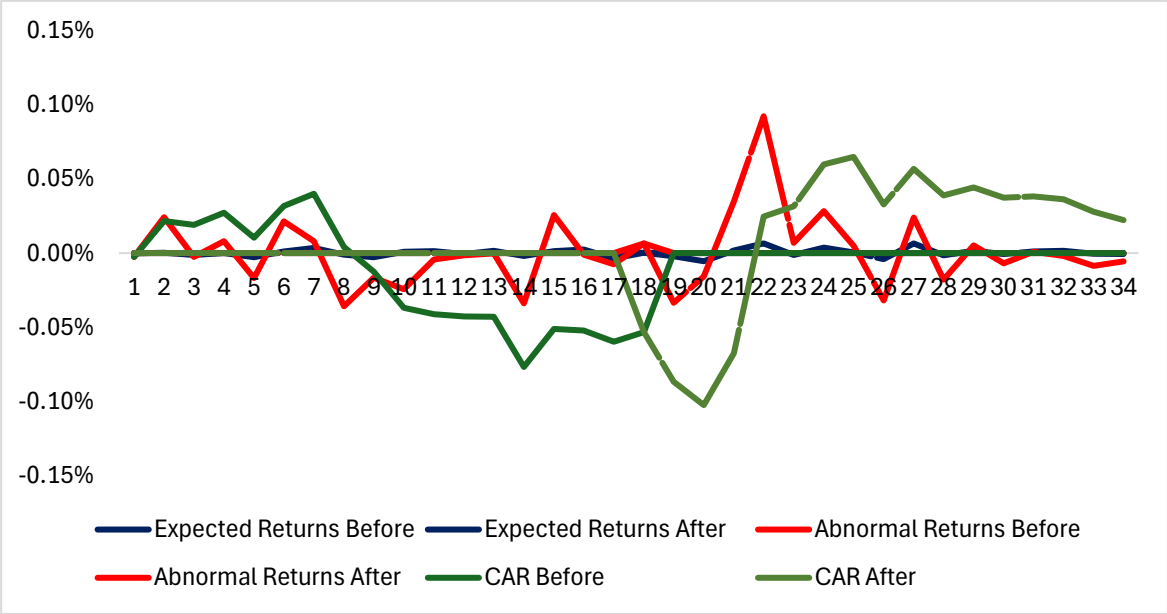

Figure 24 - Moët Hennessy 2024

The fact that abnormal returns are mostly consistent and CAR doesn't fluctuate too much indicates that expectations were not significantly altered by the sponsorship or corporate action.

For the company Santander in the years 2006, 2009, and 2021:

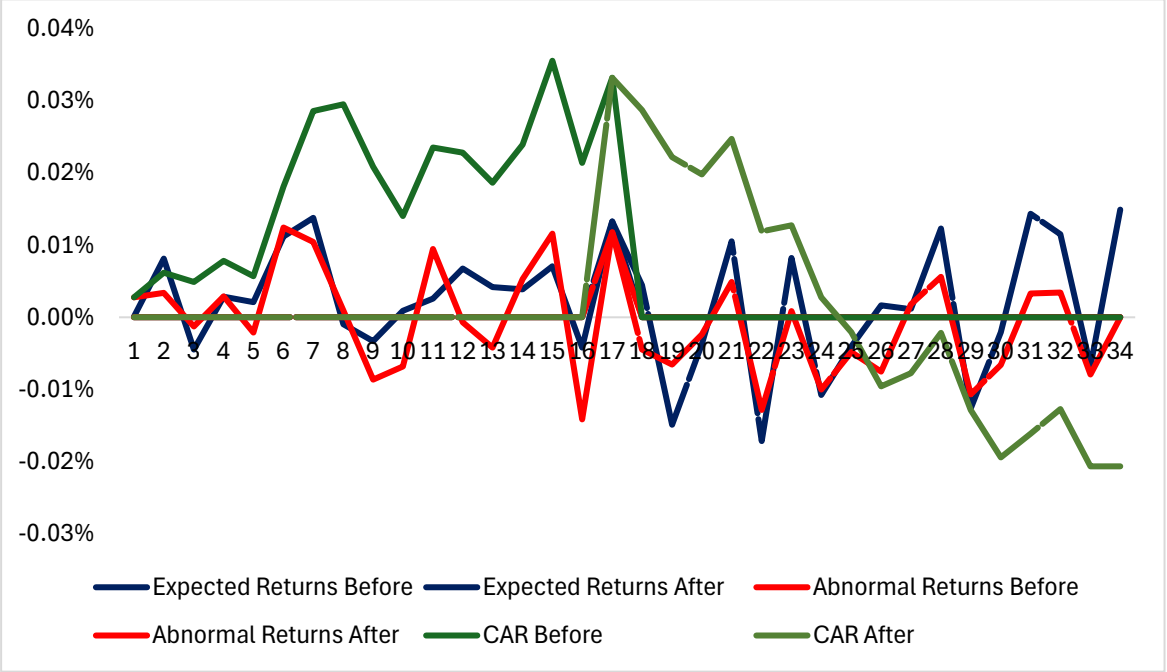

Figure 25 - Santander 2006

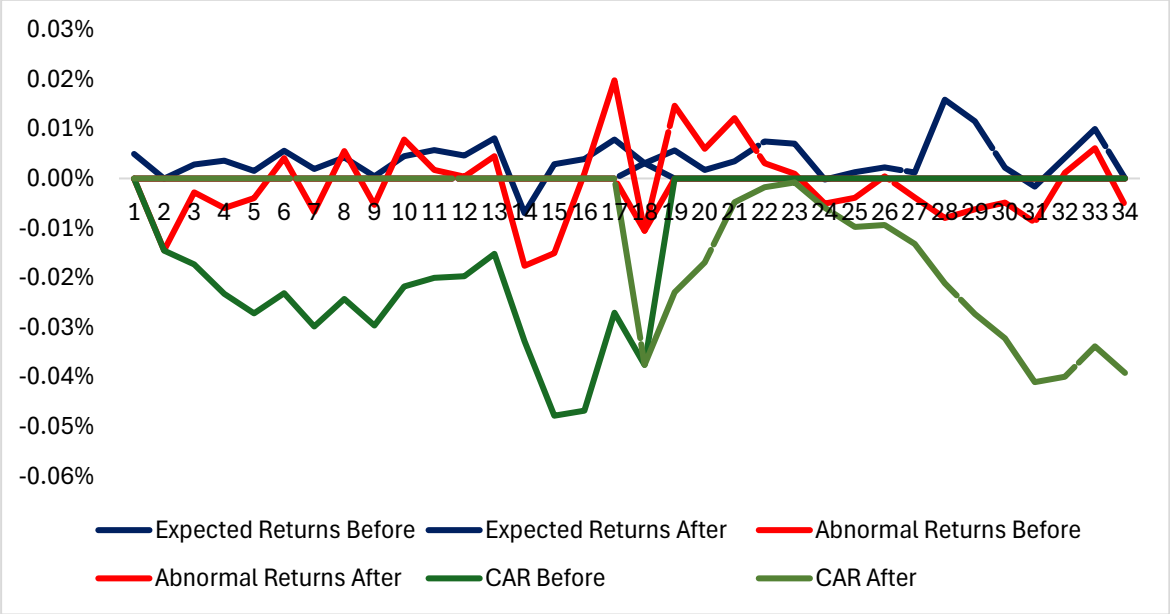

Figure 26 - Santander 2006

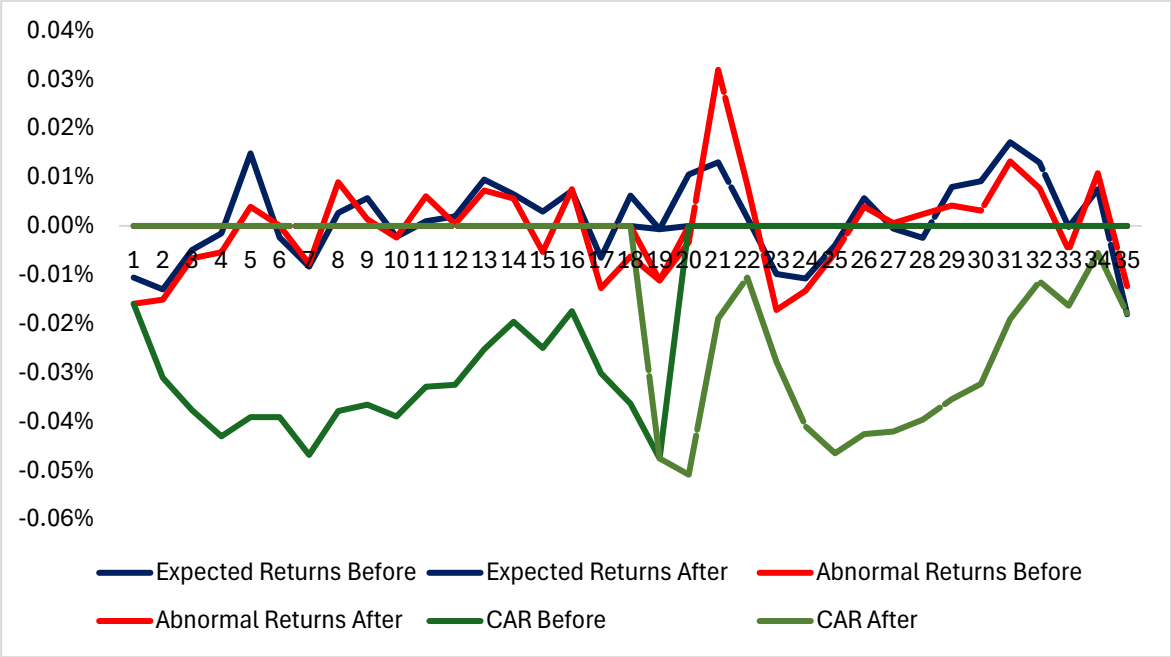

Figure 27 - Santander 2009

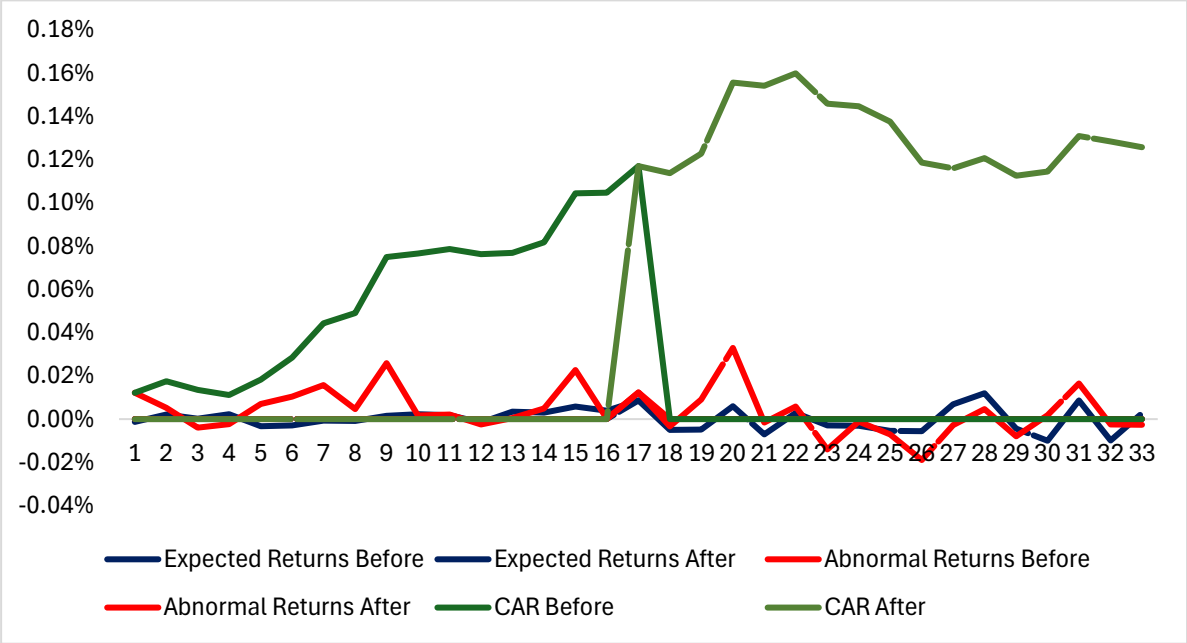

Figure 28 - Santander 2021

In 2006, CAR was negative, suggesting doubt (Figures 25 and 26). In 2009, during the financial crisis, abnormal returns were inconsistent, and CAR dipped sharply (Figure 27). By 2021, however, CAR is back on the rise, reflecting confidence (Figure 28).

For the company Oracle in the years 2021 and 2022:

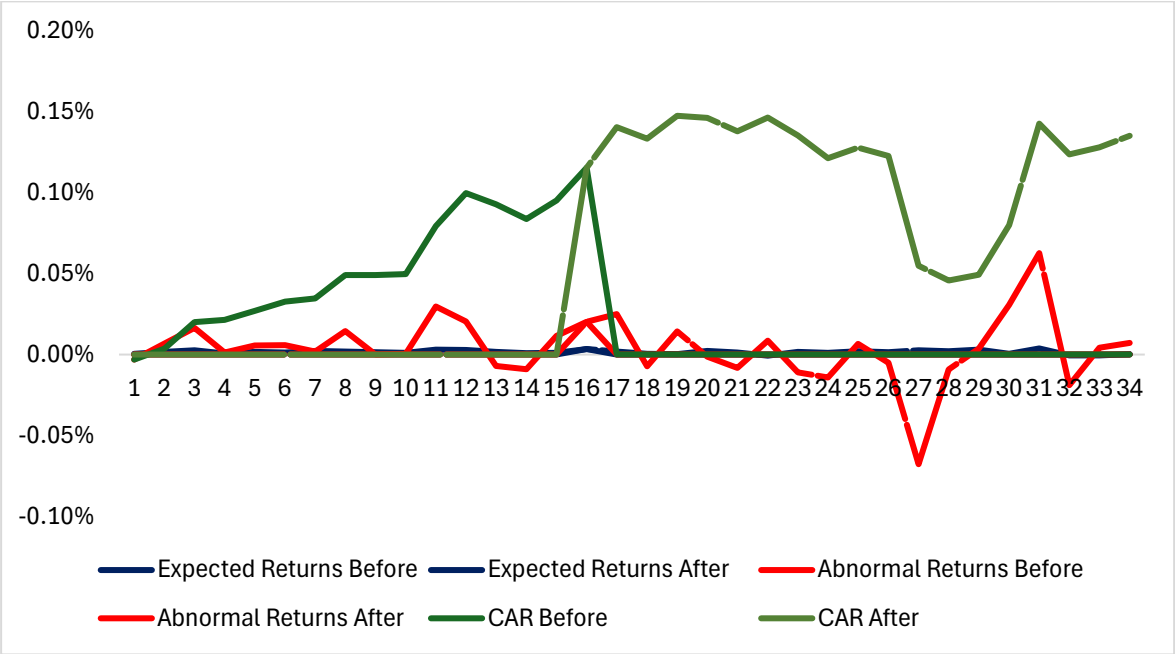

Figure 29 - Oracle 2021

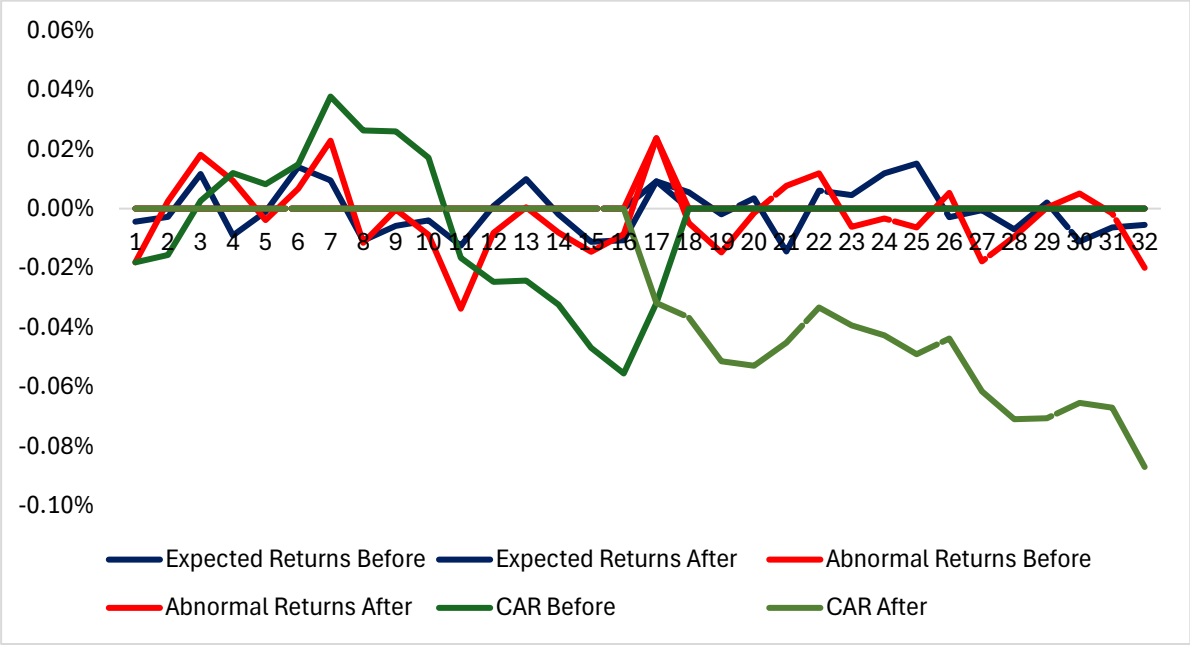

Figure 30 - Oracle 2022

Positive abnormal returns were caused by Oracle's 2021 event, and the continually rising CAR indicates positive investor reaction (Figure 29). The effect decreased by 2022, when the CAR went down, indicating that investors' expectations had changed (Figure 30).

	Returns Before	Returns After
Pirelli 2010	0,38%	0,68%
Pirelli 2013	-0,21%	0,35%
Pirelli 2018	-0,39%	-0,10%
Pirelli 2021	0,30%	0,04%
DHL 2004	-0,58%	0,30%
DHL 2018	-0,14%	-0,05%
DHL 2021	0,31%	0,40%
DHL 2024	-0,40%	-0,19%
AWS 2018	0,39%	0,12%
AWS 2022	0,45%	-1,28%
Heineken 2016	0,10%	45,79%
Heineken 2023	0,06%	-0,62%
Aramco 2020	0,12%	-0,29%
Lenovo 2022	0,72%	-0,68%
Lenovo 2024	1,17%	-0,54%
Crypto.com 2021	0,10%	-0,03%
Crypto.com 2024	-0,72%	-0,46%
Salesforce 2022	2,37%	0,39%
Puma 2023	1,46%	-0,46%
Mercedes-Petronas 2009	0,03%	0,49%
Mercedes-Petronas 2014	0,13%	0,04%
Mercedes-Petronas 2022	1,67%	-0,14%
Moët Hennessy 2024	1,47%	0,53%
Santander 2006	0,94%	-0,12%
Santander 2006	0,93%	0,37%
Santander 2009	1,16%	0,34%
Santander 2021	0,65%	0,06%
Oracle 2021	0,86%	0,35%
Oracle 2022	1,56%	-0,15%

These results capture stock returns before and after sponsorship announcements.

In some cases, the companies show positive shifts (e.g., DHL 2018: – 0.14% → -0.05%, Mercedes-Petronas 2009: +0.03% → +0.49%), while others show negative or mixed reactions (e.g., AWS 2022: +0.45% → –1.28%, Heineken 2023: +0.06% → – 0.62%).

Certain extreme outliers exist, like Heineken 2016 (+0.10% → – 45.79%), which likely reflects external market shocks unrelated to the sponsorship.

This implies that while sponsorship announcements are events with value, how the market views them relies on contextual and company-specific elements (e.g., timing, brand fit, macroeconomic situation).

Table 4 - Stock Market of the sponsorship brands and dates

	Returns Before	Returns After
Pirelli 2010	0,40%	0,62%
Pirelli 2013	-0,27%	0,42%
Pirelli 2018	-0,40%	-0,14%
Pirelli 2021	0,39%	-0,10%
DHL 2004	-0,45%	43,17%
DHL 2018	-0,05%	-0,01%
DHL 2021	0,31%	0,24%
DHL 2024	0,20%	0,37%
AWS 2018	0,29%	-0,06%
AWS 2022	0,57%	-0,09%
Heineken 2016	-0,08%	0,16%
Heineken 2023	0,06%	-0,03%
Aramco 2020	0,02%	-0,80%
Lenovo 2022	0,40%	-0,88%
Lenovo 2024	1,22%	0,11%
Crypto.com 2021	-0,14%	0,03%
Crypto.com 2024	-0,10%	0,01%
Salesforce 2022	-0,52%	0,44%
Puma 2023	0,60%	0,03%
Mercedes-Petronas 2009	0,07%	0,33%
Mercedes-Petronas 2014	0,09%	0,18%
Mercedes-Petronas 2022	1,02%	-0,26%
Moët Hennessy 2024	0,57%	0,13%
Santander 2006	0,56%	0,05%
Santander 2006	0,45%	0,45%
Santander 2009	0,89%	0,26%
Santander 2021	0,41%	0,00%
Oracle 2021	0,47%	0,10%
Oracle 2022	1,14%	0,02%

Table 5 - Market Index of the sponsorship brands and dates

Following announcements, some companies show significant positive abnormal returns in some years (e.g., DHL 2018, Mercedes-Petronas 2009, Salesforce 2022, Santander in many years).

Others (including AWS 2022, Crypto.com 2024, Oracle 2021, and Heineken 2023) exhibit neutral or unfavorable responses.

After analyzing all the graphics and seeing that the results fluctuate due to the announcement and/or external factors, we can summarize the results in the table we see next.

	Exp returns Before	Exp returns After	Abn returns Before	Abn returns After	CAR Before	CAR After
Pirelli 2010	0,37%	0,60%	0,01%	0,08%	0,60%	1,64%
Pirelli 2013	-0,27%	0,44%	0,06%	-0,09%	0,06%	-0,36%
Pirelli 2018	-0,34%	-0,27%	-0,05%	0,13%	4,42%	-2,05%
Pirelli 2021	0,18%	0,05%	0,12%	-0,02%	0,66%	1,99%
DHL 2004	19,53%	475,93%	-20,10%	-475,63%	-145,26%	-6381,77%
DHL 2018	0,02%	0,07%	-0,16%	-0,12%	-0,22%	-3,64%
DHL 2021	0,26%	0,24%	0,05%	0,16%	0,88%	4,18%
DHL 2024	0,48%	0,54%	-0,87%	-0,73%	-5,21%	-20,48%
AWS 2018	0,12%	-0,06%	0,28%	0,18%	1,54%	5,41%
AWS 2022	0,51%	0,32%	-0,05%	-1,60%	-1,59%	-23,96%
Heineken 2016	0,00%	0,00%	0,11%	45,80%	4,47%	270,86%
Heineken 2023	0,11%	0,08%	-0,04%	-0,70%	0,58%	-8,62%
Aramco 2020	-0,30%	-1,05%	0,42%	0,76%	3,68%	15,42%
Lenovo 2022	0,02%	-0,89%	0,70%	0,21%	5,76%	11,31%
Lenovo 2024	1,04%	0,55%	0,13%	-1,09%	4,94%	-5,92%
Crypto.com 2021	-0,18%	-0,06%	0,29%	0,04%	-1,10%	13,94%
Crypto.com 2024	0,13%	0,17%	-0,85%	-0,63%	-12,73%	-33,94%
Salesforce 2022	-0,13%	0,27%	-0,86%	0,12%	-4,41%	-16,07%
Puma 2023	0,14%	0,13%	-0,79%	-0,59%	-9,02%	-21,34%
Mercedes-Petronas 2009	0,10%	0,24%	-0,07%	0,25%	-0,39%	0,97%
Mercedes-Petronas 2014	0,14%	0,15%	-0,01%	-0,12%	-0,92%	1,47%
Mercedes-Petronas 2022	0,10%	-0,17%	0,19%	0,02%	4,36%	2,36%
Moët Hennessy 2024	-0,01%	0,04%	-0,35%	0,48%	-1,55%	1,21%
Santander 2006	0,32%	0,11%	0,13%	-0,23%	1,78%	0,18%
Santander 2006	0,33%	0,44%	-0,16%	-0,07%	-2,47%	-2,10%
Santander 2009	0,05%	0,23%	-0,20%	0,11%	-3,25%	-2,97%
Santander 2021	0,10%	-0,06%	0,65%	0,12%	5,43%	13,05%
Oracle 2021	0,16%	0,14%	0,64%	0,21%	4,90%	11,76%
Oracle 2022	-0,18%	0,05%	-0,35%	-0,20%	-0,56%	-5,30%

Table 6 - Linear Regression of the sponsorship brands and dates

According to these results, we can see that several firms show positive Abnormal Returns (AR) after announcements (e.g., DHL 2018 - 0.12%, Salesforce 2022 +0.12%, Oracle 2021 +0.21%) whilst others show negative AR after announcements (e.g., AWS 2022 –1.60%, Pirelli 2013 –0.09%). This confirms that stock markets react differently to different sponsors depending on context and firm characteristics.

As for the Cumulative Abnormal Returns (CAR), some very large values appear, both positive (e.g., Oracle 2021 CAR After = +11.76%, Lenovo 2022 = +11.31%, Aramco 2020 = +15.42%) and negative (e.g., Crypto.com 2024 = –33.94%, AWS 2022 = –23.96%, Pirelli 2018 = –2.05%). These results highlight that sponsorships sometimes create sustained value effects. Companies (like DHL 2004 with CAR After – 6381.77%) are clearly distorted by unrelated company events and should be treated with caution or excluded from averages.

	ANOVA
Pirelli 2010	0,25375
Pirelli 2013	0,49523
Pirelli 2018	0,96357
Pirelli 2021	0,70514
DHL 2004	0,57407
DHL 2018	0,60192
DHL 2021	0,45015
DHL 2024	0,70378
AWS 2018	0,97215
AWS 2022	0,16447
Heineken 2016	0,14341
Heineken 2023	0,10370
Aramco 2020	0,17639
Lenovo 2022	0,58884
Lenovo 2024	0,96408
Crypto.com 2021	0,64504
Crypto.com 2024	0,81373
Salesforce 2022	0,20600
Puma 2023	0,80971
Mercedes-Petronas 2009	0,33183
Mercedes-Petronas 2014	0,88455
Mercedes-Petronas 2022	0,95743
Moët Hennessy 2024	0,70878
Santander 2006	0,26107
Santander 2006	0,31490
Santander 2009	0,75414
Santander 2021	0,84188
Oracle 2021	0,66199
Oracle 2022	0,02534

Table 7 - ANOVA Multifactorial Analysis

To test the significance of the abnormal returns an ANOVA analysis was performed (Table 7).

This type of analysis compares the average of different populations to check for statistically significant differences. In this research, the populations were the sponsorship announcement dates grouped according to each of the sponsorship companies included in the study and the options defined by the variables.

In the results, if the null hypothesis is rejected then at least one group is significantly different from the others and if the null hypothesis is not rejected then there is no significant difference in abnormal returns between periods, which means that there is no statistically significant difference between mean returns before and after occurrences, as indicated by all p-values being well above the 0.05 cutoff with the exception of the company Oracle in 2022 with 0,03.

First, the research showed an overall positive effect on the stock market return value of the sponsoring company following the announcement of global official sports sponsorships (Abril et al., 2017a). Returns were increased by the events, but not in a way that could be statistically different from expectations or overall market movements, and after the events, the returns became uncertain, suggesting that the events had very large effects, whether positive and/or negative. This suggests that these events need to be analyzed based on context rather than systematically.

This implies that rather than abnormal performance related to a firm, the effect was broader across the market.

After running the SPSS program on all the results and performing the non-parametric paired test - Wilcoxon to compare the two samples “before” and “after” the events, and assuming that:

- Ho - The distribution of the returns is the same before and after the sponsorship announcement
- H1 - The distribution of the returns is different before and after the sponsorship announcement

The Wilcoxon test rejected the null hypothesis of equal distribution of the returns before and after the sponsorship announcement (Z= -2,368, p= 0,018). According to the results, the sponsorship had a positive impact on stock returns.

	Returns After - Returns Before	Exp returns After - Exp returns Before	Abn returns After - Abn returns Before	CAR After - CAR Before
Z	-2,368[b]	-,227[c]	-,443[b]	-,703[b]
Asymp. Sig. (2-tailed)	,018	,820	,658	,482

Table 8 - Returns Before and After

During the same periods, the corresponding stock market returns have not exhibited significant differences (<= -1,589; p= 0,122), providing robustness for the results.

	Returns After Market - Returns Before Market
Z	-1,589[b]
Asymp. Sig. (2-tailed)	,112

Table 9 - Stock Market Returns

As for the expected returns, there was no significant difference where the event did not alter what was already expected. The abnormal returns also didn’t have a significant difference, so although raw returns increased, there was little deviation from what may be regarded as "abnormal," and the same goes for the CAR, no significant difference, which means that there was no statistically significant difference in the model's overall performance before and after.

In hindsight, there were no significant differences on the expected returns (Z= xxx, p= -xxx), abnormal returns (< -zzz, p= zzz), and CAR (<= xxx, p= zzz).

	N	Mean	Std. Deviation	Minimum	Maximum
Returns Before	29	0,5145%	0,74563%	-0,72%	2,37%
Exp returns Before	29	0,7859%	3,61486%	-0,34%	19,53%
Abn returns Before	29	-0,7300%	3,74929%	-20,10%	0,70%
CAR Before	29	-4,9865%	27,30955%	-145,26%	5,76%
Returns Before Market	29	0,2798%	0,45180%	-0,52%	1,22%
Returns After	29	1,5567%	8,51892%	-1,28%	45,79%
Exp returns After	29	16,4907%	88,36377%	-1,05%	475,93%
Abn returns After	29	-14,9355%	89,01436%	-475,63%	45,80%
CAR After	29	-212,8548%	1187,59012%	-6381,77%	270,86%
Returns After Market	29	1,5427%	8,01307%	-0,88%	43,17%

Table 10 - Descriptive Statistics

		N	Mean Rank	Sum of Ranks
Returns After - Returns Before	Negative Ranks	19[a]	17,21	327,00
	Positive Ranks	10[b]	10,80	108,00
	Ties	0[c]		
	Total	29		
Exp returns After - Exp returns Before	Negative Ranks	13[d]	15,92	207,00
	Positive Ranks	16[e]	14,25	228,00
	Ties	0[f]		
	Total	29		
Abn returns After - Abn returns Before	Negative Ranks	14[g]	17,00	238,00
	Positive Ranks	15[h]	13,13	197,00
	Ties	0[i]		
	Total	29		
CAR After - CAR Before	Negative Ranks	14[j]	17,86	250,00
	Positive Ranks	15[k]	12,33	185,00
	Ties	0[l]		
	Total	29		
Returns After Market - Returns Before Market	Negative Ranks	17[m]	17,12	291,00
	Positive Ranks	12[n]	12,00	144,00
	Ties	0[o]		
	Total	29		

Table 11 – Ranks

7. Conclusion And Recommendations

7.1. Conclusion

First, the research showed an overall positive effect on the stock market value of the sponsoring companies' stock returns, confirmed by the Wilcoxon Test, following the announcement of global official sports sponsorships. This result highlights the advantages of official sponsors (Cornwell et al., 2005; Deitz et al., 2013), showing that their limited number, the exclusivity rights granted for a specific product category, and the broad opportunities for sponsorship-linked activities may enhance the distinctiveness of the sponsorships and its perceived value beyond the higher sponsorship fees. The global aspect of these sponsorships, additionally, suggests international reach as an advantage valued by investors (Abril et al., 2017a).

Another relevant contribution of this research is that not all sponsorships were valued equally by the stock market. Following announcements, there was an increase in raw returns, but abnormal returns (AR) and cumulative abnormal returns (CAR) did not reach statistical significance. This indicates that rather than representing distinct, firm-specific effects, performance variations were consistent with market expectations.

The response differed between years and companies. In 2022, Oracle, for example, demonstrated an important impact ($p = 0.03$), but the majority did not. This implies that market conditions, timing, and sponsor type all affect investor reactions.

If we analyze the results to reach a conclusion for the hypotheses created, if H1 is "Formula One Grand Prix sponsorships are associated with statistically significant abnormal returns in the stock prices of sponsors", then there is no consistent evidence, according to the analysis, that Formula One Grand Prix events are linked to statistically significant abnormal returns in sponsor stock prices. After races, raw returns fluctuated, but abnormal returns (AR) and cumulative abnormal returns (CAR) were not significant, indicating that firm-specific effects were not as prominent as overall market behavior. H1 is therefore not supported.

And if H2 is "Sponsorship announcements made generate a positive reaction in the stock market valuation of sponsoring companies", then the Wilcoxon test confirmed a statistically significant rise in returns following announcements ($Z = -2.368$, $p = 0.018$), demonstrating that

sponsorship announcements did cause a favorable stock market reaction. Although investors initially welcomed sponsorship announcements, the reaction was short-term and context-dependent, as this effect was mostly evident in raw returns rather than abnormal or cumulative abnormal returns. H2, therefore, is partially supported.

The results indicate that, at current pricing levels, the sponsorship announcements not only don't create value but also destroy value for the companies. This could explain some unexpected findings (Cobbs et al., 2012) in which the announcement of Formula One sponsorships also led to some negative reactions that might be due to the limited reach of audiences, despite their expensive fees. Formula One motor racing, in fact, recently has registered a substantial decrease in its global television audience, because Formula One has switched to pay-per-view television in many regions. In the case of Formula One, global viewership fell from 600 million in 2008 to 450 million in 2013 (Richards, 2015). These findings highlight the need for a careful selection of the sponsored tournament and the importance of accurate media projections to ensure the correct global consumer reach (Abril et al., 2017a).

7.2. Limitations

Although the study spans 20 years, the statistical power is limited by the small number of sponsored events which make the ability to generalize limited because only publicly traded companies with an identifiable announcement date were examined, leaving out several significant sponsors, particularly private companies, and during the 20-year period only common companies were analyzed, which represent little to nothing, excluding the majority of single-team companies and sponsors.

This research used the financial information available online, on Yahoo Finance, which made the possibility that outliers - extreme returns – were influenced by some of the findings. It also examines short-term and immediate consequences rather than sponsorship's long-term implications on financial performance or brand equity.

Event studies assume that markets assimilate new information effectively, but results could be distorted by information leaks or other outside shocks. Confounding occurrences unrelated to sponsorship may be captured by using a 50-day event period.

Lastly, this research was unable to confirm any effect of the sponsorship announcement depending on whether it was a new deal or a renewal of a previous agreement (Abril et al., 2017a).

7.3. Recommendations

Some recommendations for future research are to analyze other sectors and sports to see if Formula One sponsorship exhibits distinct patterns, examine the long-term effects of sponsorship on customer perception, brand value, and financial well-being, in addition to stock prices, and to capture more subtle trends or use different models.

As for the sponsors, the businesses should carefully consider costs because, despite growing fees, investor interest in sponsorships seems to be decreasing, and the strategic brand alignments should be linked to sponsorships; for example, automobile companies may gain more from them than other businesses.

Eventually, Formula One and event organizers should offer sponsorship packages that are data-driven and show return on investment (e.g., social media engagement, worldwide awareness), and should diversify sponsor types to give teams long-term financial stability.

Further research in this area, combined with better insight into price dynamics, will be of great interest and will help sponsoring companies decide whether to continue with existing sponsorship commitments (Abril et al., 2017a).

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9. Annexes

GP/TEAMS	Red Bull Racing RBPT	Ferrari	Mercedes	Alpine Renault	McLaren Mercedes	Alfa Romeo Ferrari	Aston Martin Aramco Mercedes	Haas Ferrari	AlphaTauri RBPT	Williams Mercedes
Bahrain	Red Bull, Oracle, Rauch, Claro, Citrix (2022–2023), Pirelli, Puma (2022), Siemens, Mobil 1, Esso, Infinitum, INTERproteccion, Hewlett Packard Enterprise (2022–2023), TAG Heuer, Servus TV, Tezos (2022), HRC/Honda, Cash App (2022–2023), Arctic Wolf, Walmart, Armor All, Bybit, Hard Rock Cafe, Zoom, Rokt (2023–2024), Castore (2023–2024), CDW, Visa (2024), Sui (2024), Pepe Jeans (2024)	Snapdragon (2022), Ray-Ban, AWS, CEVA Logistics, Estrella Galicia, Palantir, OMR Automotive, Pirelli, SKF, Brembo, NGK, VistaJet, MAHLE, Radiobook (2022), Riva, Velas (2022), Santander, Frecciarossa (2022), Shell, Bitdefender, Richard Mille, Genesys (2023), HCL Software (2023), Harman Kardon (2023), Ecopol (2023), Bang & Olufsen (2023), VGW (2023), DXC Technology (2023)	Petronas, Mercedes-AMG, AMD, Ineos, Pirelli, Tommy Hilfiger, IWC Schaffhausen, TeamViewer, CrowdStrike, Kingspan, FTX, Akkodis	Alpine, BWT, Renault, MAPFRE (2022), Castrol, BP, RCI Banque (2022), GENII (2022), Bell & Ross (2022), Pirelli, Microsoft, DuPont (2022), EURODATACAR, Mandiant (2022), Binance, Yahoo!, data.ai (2022), ADA Cosmetics, Sprinklr, Plug Power, Kappa, Mobilize, Ecowatt (2023)	A Better Tomorrow, Pirelli, CNBC, Richard Mille, Hilton, Arrow Electronics, Medallia, Tezos, Alteryx, Smartsheet, Cisco Webex, Cisco (2023), Gulf Oil (2022), Dell Technologies, DeWalt, DataRobot (2022), Gopuff, KAUST, FAI Aviation Group, FxPro, Splunk, Darktrace, PartyCasino/PartyPoker, EasyPost, Immersivelab, Logitech, McLaren Artura (2022), Android, Google Chrome, OKX, Cadence, Goldman Sachs, VMware, DP World (2023), Jack Daniel's (2023), Castore (2023), HaloITSM (2023), NTT Data (2023)	Alfa Romeo, PKN Orlen, Accelleron, Additive Industries, Adler Pelzer Group, Singha, Zadara, Magneti Marelli, Pirelli, AMX, Camozzi, Sabelt, Puma, Rebellion, Web Eyewear, Hyland, DRF Bets, ZCG	Aramco, Cognizant (2022–2023), Aston Martin (DBX707 (2023–2024), Vantage (2024), Vanquish (2024)), Peroni Brewery (2022–2023), Alpinestars (2022), Pirelli, JCB, IFS (2022), NetApp, SentinelOne, Bombardier, Crypto.com (2022–2023), Epos, Juniper Networks, Oakley, TikTok (2022 and 2024), Hugo Boss, XP (2022–2023), Porto Seguro (2023), Citi (2023–2024), Globe-Trotter (2023–2024), Ava Trade (2023–2024), Girard-Perregaux (2023–2024), Velocity Black (2023), Saudia (2023), Banco Master (2023–2024), NexGen Energy (2023–2024), Valvoline (2023–2024), Regent Seven Seas Cruises (2024), Financial Times (2024), Cognizant (2024), Wolfgang Puck (2024), MA'ADEN (2024), Glenfiddich (2024)	Haas Automation, Alpinestars, 1&1 Ionos, Pirelli, Under Armour, Tricorp Workwear, CYRUS Genève, TransferMate, Lunar, Hantec Markets, MoneyGram	AlphaTauri, Pirelli, Epicor, HRC/Honda, Fantom, ICM, Flex-Box, Ravenol, Ziba Foods, Buzz, RapidAPI, LIF3	Sofina, Acronis, Lavazza, Pirelli, Dorilton Ventures (casuaLens, VERSA Integrity Group, Honibe, JuliaHub, Cycuity, Blackbird.AI, Ursa Space Systems), Bremont, Duracell, Financial Times, DTEX Systems, Broadcom, Bang & Olufsen, Virtua, Spinal Injuries Association
Saudi Arabia										
Australia										
Emilia-Romagna										
Miami										
Spain										
Monaco										
Azerbaijan										
Canada										
Great Britain										
Austria										
France										
Hungary										
Belgium										
Netherlands										
Italy										
Singapore										
Japan										
United States										
Mexico										
Brazil										
Abu Dhabi										

Annex A - Teams Sponsors 2022 (Wikipedia contributors, 2025)

(F1 - the Official Home of Formula 1® Racing, 2025)

GP/TEAMS	Red Bull Racing Honda RBPT	Ferrari	Mercedes	Alpine Renault	McLaren Mercedes	Alfa Romeo Ferrari	Aston Martin Aramco Mercedes	Haas Ferrari	AlphaTauri Honda RBPT	Williams Mercedes
Bahrain	Red Bull, Oracle, Rauch, Claro, Citrix (2022–2023), Pirelli, Puma (2022), Siemens, Mobil 1, Esso, Infinitum , INTERproteccion, Hewlett Packard Enterprise (2022–2023), TAG Heuer, Servus TV, Tezos (2022), HRC/Honda, Cash App (2022–2023), Arctic Wolf, Walmart, Armor All, Bybit, Hard Rock Cafe, Zoom, Rokt (2023–2024), Castore (2023–2024), CDW, Visa (2024), Sui (2024), Pepe Jeans (2024)	Snapdragon (2022), Ray-Ban, AWS, CEVA Logistics, Estrella Galicia, Palantir, OMR Automotive, Pirelli, SKF, Brembo, NGK, VistaJet, MAHLE, Radiobook (2022), Riva, Velas (2022), Santander, Frecciarossa (2022), Shell, Bitdefender, Richard Mille, Genesys (2023), HCL Software (2023), Harman Kardon (2023), Ecopol (2023), Bang & Olufsen (2023), VGW (2023), DXC Technology (2023)	Petronas, Mercedes-AMG, AMD, Ineos, Pirelli, IWC Schaffhausen, TeamViewer, CrowdStrike, Akkodis, Solera Holdings, Qualcomm Snapdragon, Einhell, G42, Nuvei	Alpine, BWT, Renault, MAPFRE (2022), Castrol, BP, RCI Banque (2022), GENII (2022), Bell & Ross (2022), Pirelli, Microsoft, DuPont (2022), EURODATACAR, Mandiant (2022), Binance, Yahoo!, data.ai (2022), ADA Cosmetics, Sprinklr, Plug Power, Kappa, Mobilize, Ecowatt (2023)	A Better Tomorrow, Pirelli, CNBC, Richard Mille, Hilton, Arrow Electronics, Medallia, Tezos, Alteryx, Smartsheet, Cisco Webex, Cisco (2023), Gulf Oil (2022), Dell Technologies, DeWalt, DataRobot (2022), Gopuff, KAUST, FAI Aviation Group, FxPro, Splunk, Darktrace, PartyCasino/PartyPoker, EasyPost, Immersivelab, Logitech, McLaren Artura (2022), Android, Google Chrome, OKX, Cadence, Goldman Sachs, VMware, DP World (2023), Jack Daniel's (2023), Castore (2023), HaloITSM (2023), NTT Data (2023)	Alfa Romeo, Stake/Kick, Sauber, Pirelli, Singha, WhistlePig, Magneti Marelli, Grupo Nossa, Everdome, Accelleron, AMX, Cielo, Curam Domi, Camozzi Group, CryptoDATA (Wispr), Rebellion, Web Eyewear, AximTrade, SenseTime, Seagate, Mascot Workwear, CODE-ZERO, Hyland, Corinthian Re, Cielo, Everdome, Ambrosial, Fix Network	Aramco, Cognizant (2022–2023), Aston Martin (DBX707 (2023–2024), Vantage (2024), Vanquish (2024)), Peroni Brewery (2022–2023), Alpinestars (2022), Pirelli, JCB, IFS (2022), NetApp, SentinelOne, Bombardier, Crypto.com (2022–2023), Epos, Juniper Networks, Oakley, TikTok (2022 and 2024), Hugo Boss, XP (2022–2023), Porto Seguro (2023), Citi (2023–2024), Globe-Trotter (2023–2024), Ava Trade (2023–2024), Girard-Perregaux (2023–2024), Velocity Black (2023), Saudia (2023), Banco Master (2023–2024), NexGen Energy (2023–2024), Valvoline (2023–2024), Regent Seven Seas Cruises (2024), Financial Times (2024), Cognizant (2024), Wolfgang Puck (2024), MA'ADEN (2024), Glenfiddich (2024)	Haas Automation, MoneyGram, Chipotle Mexican Grill, Alpinestars, Pirelli, Lunar, Oakberry, Tricorp Workwear, Palm Angels, OpenSea, Hantec Markets, Travismathew, Schuberth, MGM Resorts International, SafetyCulture, Play'n GO, Toyota Gazoo Racing (2024), UChicago Medicine (2024), Mercari (2024), Orion180 (2024)	AlphaTauri, PKN Orlen, Pirelli, Epicor, HRC/Honda, Flex-Box, Ravenol, RapidAPI, XMTrading, NEFT Vodka, Gundam	Acronis (Infinigate Cloud), Pirelli, Gulf Oil, Dorilton Ventures, Duracell, Financial Times, PureStream, Stephens Inc., Michelob Ultra, Bremont, Jumeirah Hotels & Resorts, Kraken, My protein
Saudi Arabia										
Australia										
Azerbeijan										
Miami										
Monaco										
Spain										
Canada										
Great Britain										
Austria										
Hungary										
Belgium										
Netherlands										
Italy										
Singapore										
Japan										
Qatar										
United States										
Mexico										
Brazil										
Las Vegas										
Abu Dhabi										

Annex B - Teams Sponsors 2023 (Wikipedia contributors, 2025)

(F1 - the Official Home of Formula 1® Racing, 2025)

GP/TEAMS	Red Bull Racing Honda RBPT	Ferrari	Mercedes	Alpine Renault	McLaren Mercedes	Kick Sauber Ferrari	Aston Martin Aramco Mercedes	Haas Ferrari	RB Honda RBPT	Williams Mercedes
Bahrain	Red Bull, Oracle, Rauch, Claro, Citrix (2022–2023), Pirelli, Puma (2022), Siemens, Mobil 1, Esso, Infinitum , INTERproteccion, Hewlett Packard Enterprise (2022–2023), TAG Heuer, Servus TV, Tezos (2022), HRC/Honda, Cash App (2022–2023), Arctic Wolf, Walmart, Armor All, Bybit, Hard Rock Cafe, Zoom, Rokt (2023–2024), Castore (2023–2024), CDW, Visa (2024), Sui (2024), Pepe Jeans (2024)	HP, Ray-Ban, AWS, CEVA Logistics, Palantir, OMR Automotive, Pirelli, Riva, Peroni Brewery, Santander, Shell, Richard Mille, Genesys, HCL Software, Puma, Ecopol, Harman Kardon, Bang & Olufsen, VGW, Celsius, DXC Technology, ZCG, SKF, Brembo, NGK, VistaJet, MAHLE	Petronas, Mercedes-AMG, AMD, Ineos, Pirelli, IWC Schaffhausen, TeamViewer, CrowdStrike, Akkodis, Solera Holdings, Qualcomm Snapdragon, Einhell, G42, SAP, Signify N.V.	Alpine, BWT, Renault, Castrol, BP, Pirelli, Microsoft, Binance, Yahoo!, ADA Cosmetics, Sprinklr, Kappa, Mobilize, H. Moser & Cie, Business Solver, MNTN, INFINOX, Banco BRB, ApeCoin, JAAQ	OKX, Google Chrome, A Better Tomorrow, Pirelli, Cisco (Cisco Webex), DP World, CNBC, Richard Mille, MasterCard, Hilton, Alteryx, Dell Technologies, DeWalt, FxPro, Darktrace, Cadence, Goldman Sachs, Jack Daniel's, NTT Data, Gopuff, Arrow Electronics, KAUST, FAI Aviation Group, VMware, Estrella Galicia, HaloITSM, Workday, Dropbox, Airwallex, eBay, Monster Energy, Castore, Ecolab, Optimum Nutrition, Coca-Cola	Stake/Kick, Sauber, Pirelli, Singha, WhistlePig, Magneti Marelli, Grupo Nossa, Everdome, Accelleron, AMX, Cielo, Curam Domi, Camozzi Group, CryptoDATA (Wispr), Rebellion, Web Eyewear, AximTrade, SenseTime, Seagate, Mascot Workwear, CODE-ZERO, Hyland, Corinthian Re, Cielo, Everdome, Ambrosial, Fix Network, Zero Petroleum	Aramco, Cognizant (2022–2023), Aston Martin (DBX707 (2023–2024), Vantage (2024), Vanquish (2024)), Peroni Brewery (2022–2023), Alpinestars (2022), Pirelli, JCB, IFS (2022), NetApp, SentinelOne, Bombardier, Crypto.com (2022–2023), Epos, Juniper Networks, Oakley, TikTok (2022 and 2024), Hugo Boss, XP (2022–2023), Porto Seguro (2023), Citi (2023–2024), Globe-Trotter (2023–2024), Ava Trade (2023–2024), Girard-Perregaux (2023–2024), Velocity Black (2023), Saudia (2023), Banco Master (2023–2024), NexGen Energy (2023–2024), Valvoline (2023–2024), Regent Seven Seas Cruises (2024), Financial Times (2024), Cognizant (2024), Wolfgang Puck (2024), MA'ADEN (2024), Glenfiddich (2024)	Haas Automation, MoneyGram, Chipotle Mexican Grill, Alpinestars, Pirelli, Lunar, Oakberry, Tricorp Workwear, Palm Angels, OpenSea, Hantec Markets, Travismathew, Schuberth, MGM Resorts International, SafetyCulture, Play'n GO, Toyota Gazoo Racing (2024), UChicago Medicine (2024), Mercari (2024), Orion180 (2024)	Visa, Cash App, Red Bull, Pirelli, Ravenol, Tudor Watches, XMTrading, NEFT Vodka, HRC/Honda, Epicor, PKN Orlen, Hugo Boss	Dorilton Ventures (causaLens, JuliaHub), Pirelli, Duracell, Gulf Oil, PureStream, Stephens Inc., THG Ingenuity Cloud Services, Kraken, Myprotein, VAST Data, Komatsu, Keeper Security, Mercado Libre
Saudi Arabia										
Australia										
Japan										
China										
Miami										
Emilia-Romagna										
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Canada										
Great Britain										
Austria										
Hungary										
Belgium										
Netherlands										
Italy										
Azerbaijan										
Singapore										
United States										
Mexico										
Brazil										
Las Vegas										
Qatar										
Abu Dhabi										

Annex C - Teams Sponsors 2024 (Wikipedia contributors, 2025)

(F1 - the Official Home of Formula 1® Racing, 2025)