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The FIFA World Cup Effect
Evidence from Initial Public Offerings in Europe and Asia

Author: Lucas Vega Sousa
Student number: 601154
Thesis supervisor: Amy Li
Second reader: Dr. Kan Ji
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ABSTRACT

In this thesis, I study whether the FIFA World Cup affects Initial Public Offering (IPO) returns and price adjustments. The research analyses a dataset of 732 IPOs in Europe and Asia and uses Ordinary Least Squares regressions and Propensity Score Matching to test the World Cup effect. I found no significant World Cup effect in terms of short- and long-term returns, however, evidence suggests a positive effect on partial adjustments. The analysis and literature discussion suggests that World Cup IPOs are likely to have a lower filing price, maybe due to a “low-balling” of underwriters in a context of asymmetric information. However, further research in these regions needs to be done to prove this effect.

Keywords: World Cup, IPO, Underpricing, Partial Adjustment

TABLE OF CONTENTS

ABSTRACT.....	iii
TABLE OF CONTENTS.....	iv
LIST OF TABLES.....	v
CHAPTER 1 Introduction.....	1
CHAPTER 2 Theoretical Framework.....	3
2.1 IPO Returns.....	3
2.1.1 Underpricing & “Hot Issue” Markets.....	3
2.1.2 Long-Term Underperformance.....	3
2.1.3 Price Adjustment.....	4
2.2 The FIFA World Cup in the Academic Literature.....	4
2.3 Previous Studies on the FIFA World Cup and IPO Returns.....	5
2.4 Hypothesis Development.....	6
CHAPTER 3 Data & Methods.....	7
3.1 Sample Description.....	7
3.2 Variables.....	7
3.3 Methodology.....	9
CHAPTER 4 Results.....	10
4.1 The World Cup Effect on Short-Term Returns.....	10
4.2 The World Cup Effect on IPO Long-Term Performance.....	12
4.3 The World Cup Effect on Price Adjustment.....	14
CHAPTER 5 Discussion & Limitations.....	16
5.1 Discussion.....	16
5.2 Limitations & Future Research.....	17
CHAPTER 6 Conclusion.....	18
REFERENCES.....	19
APPENDIX A Additional Tables.....	22

LIST OF TABLES

Table 1: Descriptive Statistics..... 7

Table 2: Sample Comparison..... 8

Table 3: The World Cup Effect on IPO Short-Term Returns 10

Table 4: IPO Short-Term Returns Robustness Checks..... 11

Table 5: The World Cup Effect on IPO Long-Term Returns 12

Table 6: The World Cup Effect on IPO Price Adjustment 14

Table 7: The World Cup Effect on First- and Second-Week Returns 22

Table 8: The World Cup Effect on IPO Returns After 2 and 3 Months 22

CHAPTER 1 Introduction

Many recent theories and research papers analyse behavioural biases in asset prices and financial markets. In particular, research analysing sports sentiment has found a significant relationship with stock returns during a major sporting event (Payne et al., 2018). Only contested by the Olympics, the Federation Internationale de Football Association (FIFA) World Cup is, for many, the largest sporting event in the world. For instance, a report published by Hudson in 2006 shows that 63% of men and 52% of women stated that their team's sporting success affects their approach to work. Kaplanski & Levy (2010) found that, during this sporting event, US stock market returns were negative due to the lack of foreign investors. However, this event not only affects the US market. Ehrmann & Jansen (2017) discovered a decreased market activity in Europe during the 2010 World Cup held in South Africa. In the European Initial Public Offering (IPO) market, a lack of attention or a change in sentiment may affect the first-day closing prices. Commonly known as the most popular sport in Europe, it is unsurprising that European investors shift their attention to the sport's largest event, which happens only once every four years.

Previous research shows that the FIFA World Cup affects the IPO market. For instance, Fjesme et al. (2023) determined that IPOs in the US market receive less attention and lower valuations during the FIFA World Cup compared to IPOs before or after the event. They collected data from US IPOs during 1985-2020 and included subsamples for robustness. After a regression analysis, the authors found that IPOs during the World Cup exhibit 3.69% lower first-day returns and, in turn, higher long-run returns. Their analysis is consistent with previous research by Ehrmann & Jansen (2017) and Kaplanski & Levy (2010), who related the negative effect to the lower attention of foreign investors. Contrarily, Lee & Chiu (2016) found that sports sentiments are insignificant for local stock market returns. However, they discovered a significant effect on the sponsors' stock returns, depending on whether the national team won or lost a championship game. This backs research by Klein et al. (2009), which does not find a connection between a match result and stock prices, thus supporting market efficiency. Overall, existing research finds that the World Cup affects the US IPO market, yet it does not affect local stock market returns.

However, besides the analysis by Fjesme et al. (2023), no research has studied the World Cup effect on the IPO market. Therefore, I will replicate the study by Fjesme et al. with IPOs in Europe and Asia. Europe can be a stimulating context to test the robustness of the analysis because European investors tend to watch more football than Americans. On the other hand, Asia seems like the ideal setting to compare continents with a different football culture than Europe, other than the US. These cultural differences can translate into a distinct IPO frequency, underpricing, and long-run returns. There is little to no research about IPOs in these two continents, which is why this study is relevant for the academic literature. Even though studies like Lee & Chiu (2016) do not find a significant effect of the World Cup on local stock returns, investors may not pay as much attention to the local IPO market as to the stock market. Hence, it is plausible to find a different effect by solely analysing IPOs. In this thesis, I will explain these ideas in greater detail by

answering the following research question: *“How does the FIFA World Cup affect the IPO markets of Europe and Asia between 2003 and 2021?”*

The main objective of this study is to explain IPO returns in Europe and Asia, which will be measured in percentages, to understand their variations during the FIFA World Cup. This will be operationalised as IPOs in Europe and Asia during the tournament dates. I will collect this data from Datastream, and it will consist of IPOs for the 2003-2021 period in the two continents, covering four World Cups. I will perform an OLS regression analysis with high-dimensional fixed effects, using a World Cup dummy as the dependent variable. I will also use Propensity Score Matching to test the treatment effect for World Cup IPOs. I will consider IPO returns for the first day, month, and after a year. This will help distinguish between immediate, short- and long-term returns, improving the efficiency of the analysis. I will control for overhang, listing time, private equity/venture capital backing, summer effects, and IPOs that may anticipate a possible World Cup effect.

I expect to find similar results to Fjesme et al. (2023). The analysis should yield a significant relationship between the World Cup period and IPO returns, with significantly lower coefficients for the short-term returns and price adjustments and a higher long-term reversal. This will be partly explained due to investors shifting their attention to the most popular sporting event in the world. This analysis will significantly contribute to the lack of research about IPOs outside of the US during global events and to the debate of whether sports sentiment affects market returns. Furthermore, it will provide evidence of a relationship between the World Cup and IPO returns, giving investors strategies to employ during those periods. However, there is still room for debate on the effect of the World Cup on other regions, such as the South American market. The sport, in some cases deeply integrated into politics, might show a different relationship with financial markets than in Europe, the US, and Asia. However, it would be best to wait for some years, as there is not enough information from that region to conduct such research properly.

In summary, the findings suggest that there is no evidence of a World Cup effect on returns and contradict the initial hypothesis for price adjustments. This contradicts previous findings on IPO and stock market returns. The study supports the idea that high-price underwriters hold more information and manipulate lower filing prices around global events, which is backed by a part of the literature. However, there may potentially exist omitted variable bias due to not including ownership and pre-market returns data.

The rest of the thesis is structured as follows. Section 2 discusses the existing literature and current empirical research. Section 3 introduces the dataset and the methodology that will be used. Section 4 presents the results of the analysis. Section 5 discusses the results and limitations, comparing them with the existing literature. Finally, Section 6 provides a conclusion of the thesis.

CHAPTER 2 Theoretical Framework

2.1 IPO Returns

First of all, it is worth reviewing the dictionary definition of an Initial Public Offering (IPO), as it is a great start for a complete understanding of the topic. Following the Cambridge Dictionary (2024), an IPO is understood as the first sale of the shares of a company to the public. In other words, it is when a company starts being publicly traded. IPO returns can be thought of as stock returns, yet they present specific characteristics further developed in the academic literature, such as underpricing and long-term underperformance.

2.1.1 Underpricing & “Hot Issue” Markets

Ibbotson (1975) was one of the first researchers to study IPO performance in the secondary market. Motivated by initial findings in primary markets by the SEC in the 1960s, he studied the initial performance of IPOs in the aftermarket, finding evidence of abnormally high initial returns, suggesting underpricing. This is further developed by Ibbotson & Jaffe (1975), who focused on studying the existence of “hot issue” markets, defined as periods where the average first-month aftermarket performance of IPOs is abnormally high. Apart from evidence of underpricing, the authors found that such an increase in returns also involves an increase in the volume of IPOs. Ibbotson, Sindelar, & Ritter (1988) consolidated this knowledge by studying 2,439 IPOs from 1975 to 1984. They reached six conclusions: (1) IPOs are significantly underpriced, (2) a more well-established issuer and less investor uncertainty lead to lower underpricing, (3) periods of strong and weak performance happen in predictable cycles (“hot issue” market phenomenon), (4) initial returns may be negative in cold markets, (5) IPO volume fluctuations come in waves and are serially correlated, and (6) underpricing leads to an IPO volume increase 6 to 12 months afterwards (Sindelar, & Ritter, 1988, p. 42).

Ljungqvist (2007) studied IPO underpricing to find the main reason why it was caused. Empirical evidence in his study supports that information asymmetries are the main drivers of underpricing, which is also supported by Ibbotson, Sindelar, & Ritter (1988). However, Ljungqvist emphasises that it may not be the only driver, especially in hot markets such as the internet bubble during 1998-2000, where investors put their money in internet and technology-related start-ups with little to no profitability (Duignan, 2024).

Overall, the literature suggests that IPOs present abnormally high initial returns and identifies “hot issue” markets in the month after the issue. It follows that information asymmetries are the main cause of this abnormal behaviour; however, other causes are plausible, especially in volatile markets.

2.1.2 Long-Term Underperformance

Ibbotson (1975) suggested that, in the long run, IPO returns may become negative, though he could not prove it to be statistically significant. Ritter (1991) built upon that knowledge and found that three-year buy-and-hold strategies starting from the first-day closing price were, on average, negative in the US IPO market. This meant ultimately that IPOs tend to underperform in the long term. Loughran, Ritter, &

Rydqvist (1994) also explain that IPO long-term returns are lower on average compared to the market. They explain that returns are lower if the risk is higher and if the market level is higher. Chang, Wang, & Wei (2004) compared A- and B-share¹ IPO returns in the Chinese market. They found that A-share long-term returns underperform the benchmark portfolio, while B-share long-term returns are actually higher.

Derrien (2005) investigates the relationship between investor sentiment and IPO pricing. He found that investor demand for IPO shares negatively affects long-term performance, meaning that less demand for shares leads to higher returns in the long run. Cornelli, Goldreich, & Ljungqvist (2006) analyse pre-IPO markets, “grey” markets, whose main participants are small investors. They explore the relationship between the valuation made by small investors and the stock’s long-term performance. Their findings suggest that when the “grey” market prices are higher than the fundamental value of the IPO, there exists a long-term price reversal to the fundamental value.

Overall, previous literature shows evidence of lower long-term performance, reverting back to the fundamental value after the abnormally high short-term returns. Additionally, there is an indication of the negative relationship between investor demand for shares and IPO performance in the long run, which will be important to analyse in the context of the World Cup.

2.1.3 Price Adjustment

Benveniste & Spindt (1989) were the first to explore the communication between issuer and underwriter. Their findings show that underwriters adjust the offer price based on the information they collect from investors. However, it was Hanley (1993) who first documented the partial adjustment phenomenon. This occurrence is the fact that IPOs with an offer price higher than the filing price exhibit higher initial returns (hence higher underpricing). Hoberg (2007) built upon that knowledge and found evidence that supports information asymmetry among underwriters, and that high-underpricing underwriters are responsible for the partial adjustment phenomenon. He argues that high-underpricing underwriters have access to superior information. However, as highlighted by Lowry & Schwert (2004), underwriters omit some of the information after setting the prices, meaning the IPO process is not fully efficient.

Overall, the literature explains that there exists a partial adjustment phenomenon due to information asymmetries and high-underpricing underwriters. Studies highlight that IPOs with a higher price adjustment exhibit higher underpricing.

2.2 The FIFA World Cup in the Academic Literature

For the purpose of this thesis, it is important to provide a brief explanation of the FIFA World Cup. It is an international men’s football tournament that has taken place every four years since 1930, organised by the Fédération Internationale de Football Association (FIFA). Usually, it lasts for a month during summer in the northern hemisphere and national teams qualify by facing other teams from the same region. It is globally viewed as the most popular sporting event in the world. For instance, in 2006, more than 30 billion

¹ Class A shares typically have more voting rights than Class B shares (Maverick, 2024).

cumulative television views were recorded throughout the competition (Wong, 2013), and it was estimated that the FIFA World Cup expected to record more than \$1 billion in advertising revenue (Business Week Online, 2006). This makes it also a great opportunity for companies to reach sponsorship agreements or to find a way to participate in the event. Due to the popularity of this event, researchers have tried to analyse abnormal returns in the stock market during the tournament (Ehrmann & Jahnsen, 2017; Lee & Chiu, 2016). These studies aimed to understand how such a large-scale event might influence investor behaviour and market dynamics.

Schwartz et al. (1987) introduced football into the scientific literature to study human psychology. They called male respondents shortly before or after two games of the 1982 FIFA World Cup, asking questions regarding personal happiness and satisfaction with income, work, and national issues. The researchers found that the outcome of those games significantly affected their responses. This motivated Edmans et al. (2007), which was one of the first studies to introduce the topic to the economic literature by analysing the effect of international football games on stock market returns. They identified that a national team loss negatively affects stock returns, with a larger magnitude when the game is more important or when the stock is smaller. On a similar note, Ashton et al. (2003) found a significant impact of national team success on the domestic stock exchange performance. They found a relationship that also highlights movements in stock returns based on game relevance. However, both papers by Edmans et al. and Ashton et al. study the effect of football matches rather than the effect of the competition as a whole. Kaplansky & Levy (2010) were the first to approach the study of this topic differently; they analysed the World Cup effect on an aggregate level instead of per game. They found negative effects and attributed this to a lower attention of foreign investors.

All in all, the FIFA World Cup does not have much development in existing literature. However, the literature shows that it has an effect on stock market returns, both when analysing the tournament on an aggregate and individual level. Studies emphasise the importance of foreign investors, and usually relate the lower stock market returns to their decreased levels of attention and sentiment.

2.3 Previous Studies on the FIFA World Cup and IPO Returns

The only recorded report that analysed the effect of the FIFA World Cup on the IPO market is Fjesme et al. (2023). They tested that IPOs listed during the World Cup show lower underpricing and price adjustments, but higher long-run returns. This study used data from US IPOs between 1985 and 2020. In terms of analysis, the researchers used an Ordinary Least Squares regression analysis, and, for robustness, they matched World Cup IPOs to non-World Cup IPOs based on financial and external factors, finding consistent results. They concluded that lower sentiment in non-US investors leads to lower underpricing, resulting in a lower difference between filing and offer prices.

While it is true that the study by Fjesme et al. (2023) was the only one that directly explored the effect of the FIFA World Cup on IPO returns, research has also studied different sports tournaments of global scale or relevance, such as the Olympics, with findings that potentially apply to the FIFA World Cup. Markellos

& Wang (2018), for instance, analyse the effect of the Summer Olympic Games on investor sentiment, attention, and market activity. This article made a breakthrough in the topic; the authors were the first to distinguish between investor attention and sentiment. Their contribution was that sporting success, at least in the Olympics, results in investor inattention, but does not affect investor sentiment. The lower attention explains the decreased market activity found because of the Olympic Games and medals. In my opinion, this is the main difference between other competitions such as the Olympics and football. In the sport, sentiment and attention are more likely to go side by side, especially when the national team is playing.

Overall, these two papers show evidence of lower attention and decreased investor sentiment during periods of globally relevant sports tournaments.

2.4 Hypothesis Development

Following the research on IPO underpricing and short-term returns and the fact that the FIFA World Cup lasts for one month, investor inattention and the apparent reduction in sentiment are likely to cause a decrease in short-term returns, namely after one day until after a month. This, in turn, would lead to lower underpricing when compared to non-World Cup IPOs. The first hypothesis explores this:

***H1:** IPOs listed during the FIFA World Cup exhibit lower short-term returns.*

As the literature explains, IPOs tend to revert to their fair value after some time. In that sense, it is expected that, after the possible effects of the FIFA World Cup due to lower sentiment and attention, the IPO market will revert to normal after the tournament. This means IPOs listed during the World Cup are likely to have a better long-term performance than non-World Cup IPOs. Derrien's (2005) findings support that a lower demand for shares, in this case, due to lower attention, would lead to higher long-term returns. The second hypothesis explores this dynamic:

***H2:** IPOs listed during the FIFA World Cup exhibit higher long-term returns.*

In terms of price adjustments, the literature argues that public information should be accounted for in the IPO offer prices. Studies explain that information asymmetries are the main drivers of the partial adjustment phenomenon. Therefore, when a World Cup is coming, underwriters should account for the reduction of sentiment and the lower attention with a low offer price. This is explained by a lower demand for IPO shares and compensates for the possible decrease in short-term returns within World Cup IPOs. Hence, the difference between filing and offer price should be lower for World Cup issues. The third hypothesis studies this relationship:

***H3:** IPOs listed during the FIFA World Cup exhibit lower price adjustments.*

CHAPTER 3 Data & Methods

3.1 Sample Description

I used Datastream to collect data about 20,000 IPOs in Europe and Asia from 1992 to 2024. I focused on those continents since there is little research on IPOs there, and those periods allowed for a more robust analysis. However, most of the data was either repeated or incomplete, making the final sample consist of 732 observations from 2003 to 2021. This is a limitation of the study, yet the sample size and the fact that it still covers four World Cups makes it still possible for an analysis. I excluded IPOs in the financial and utilities industry, penny stocks (offer price under €5.00), and observations without stock information in Datastream. Additionally, I excluded observations without issue date, filing date, percentage of shares issued, and outliers with returns higher than 100% and proceeds higher than €300 million. Table 1 shows the descriptive statistics of the sample.

Table 1: Descriptive Statistics

Variable	Obs	Mean	Std. dev.	Min	Max
Adjustment	732	0.017	0.123	-0.782	0.405
BH2mo	732	-0.011	0.161	-0.679	0.499
BH3mo	732	-0.021	0.209	-0.777	0.497
BH6mo	732	-0.055	0.307	-0.784	0.918
BH12mo	732	-0.150	0.367	-0.863	0.999
BV/MV	732	0.511	0.364	0.025	2.998
Europe	732	0.116	0.321	0.000	1.000
First day return	732	0.181	0.301	-0.410	0.988
First week return	732	0.144	0.292	-0.511	0.999
First 2 weeks return	732	0.126	0.293	-0.532	0.999
First month return	732	0.114	0.317	-0.510	0.998
Listing time	732	32.93	37.66	0.000	451.00
MV	732	144.24	187.75	6.550	1,902.83
Overhang	732	3.891	2.071	0.149	13.859
PE backed	732	0.036	0.185	0.000	1.000
Pre-WC filing	732	0.029	0.167	0.000	1.000
Proceeds	732	36.46	47.59	1.020	297.64
PV EBITDA	437	5.249	78.92	-1,351.34	405.15
PV Sales	467	32.01	203.60	0.103	2,828.90
Summer	732	0.243	0.429	0.000	1.000
VC backed	732	0.350	0.477	0.000	1.000
WC listing	732	0.027	0.163	0.000	1.000
WC filing	732	0.030	0.171	0.000	1.000
WC listing +1 month	732	0.031	0.175	0.000	1.000
WC listing -1 month	732	0.019	0.137	0.000	1.000

Note. BH means the buy-and-hold strategy of buying the stock one month after the issue. Europe, PE/VC Backed, World Cup filing/listing, and Summer are dummies. Listing time is measured in days. Proceeds are measured in millions of euros.

3.2 Variables

The *BH* variables provide buy-and-hold returns if the stock was bought after one month of its issue date and held for 2, 3, 6, and 12 months. They show on average negative values, which is consistent with the long-run underperformance theory discussed in the literature. *First-day/week/month returns* are on average greater than 11%, which shows consistency with the underpricing theory (Ibbotson, Sindelar, & Ritter,

1988). Additionally, *Adjustment* shows the change in percentage between the mid-filing price and the offer price.

The World Cup dummies were created based on the IPO issue and filing dates. I segmented the differences into four dummies: *WC filing* if the IPO was filed during a World Cup; *WC listing* if the IPO was issued during a World Cup; *WC listing -1 month* if the IPO was listed within the month before a World Cup; and finally, *WC listing +1 month* if the IPO was listed within the month after a World Cup. The FIFA World Cup exact dates were validated with FIFA's official website. Table 2 shows the difference in the two samples, based on *WC listing*. It also includes the results of an independent samples t-test to assess whether the sample differences are significant. There is an indication of significant differences in terms of *Adjustment* and *BH6mo*, which will be further tested in Section 4.

Table 2: Sample Comparison

Variable	WC listing = 0		WC listing = 1		Difference
	Obs	Mean	Obs	Mean	
Adjustment	712	0.016	20	0.066	-0.05* (0.028)
BH2mo	712	-0.010	20	-0.021	0.011 (0.036)
BH3mo	712	-0.021	20	-0.030	0.009 (0.048)
BH6mo	712	-0.051	20	-0.181	0.130* (0.069)
BH12mo	712	-0.148	20	-0.224	0.076 (0.083)
First day return	712	0.180	20	0.215	-0.035 (0.068)
First week return	712	0.141	20	0.203	-0.061 (0.066)
First 2 weeks return	712	0.125	20	0.160	-0.035 (0.066)
First month return	712	0.115	20	0.094	0.021 (0.072)

Note. Independent samples t-test was conducted to check the significance of the mean difference, based on *WC listing*. H0: mean (0) = mean (1). For the alternative hypotheses, difference = mean (0) – mean (1), and Ha: difference \neq 0. 10%, 5%, and 1% significance levels are described as *, **, and ***, respectively.

For control variables, I used *Overhang*, which is shares retained divided by shares offered. I also used two dummy variables showing whether the IPO is backed by either a venture capital or private equity firm. Furthermore, I calculated *Listing time* by taking the difference between the filing and issue dates. Since the data starts from 2003, it was not necessary to create a dummy variable to account for the IPO bubble between 1999 and 2000, as done by Fjesme et al. (2003). Additionally, I created a dummy variable for the IPOs listed during June, July, and August, i.e. during summer. This accounts for a possible daylight effect on returns, as documented by Kamstra et al. (2003), which may cause bias in the analysis since the World Cups between 2003 and 2021 took place during the Northern Hemisphere summer. To account for IPOs anticipating a potential World Cup effect, I based myself on Fjesme et al. (2003) and created *Pre-WC filing*. This dummy variable equals 1 if the days between the filing date and a World Cup starting date is smaller

or equal to the median listing time. Data about the company's market and book value after the issue, taken from Datastream, will be used to match World Cup IPOs to non-World Cup IPOs in the analysis. Finally, to distinguish the European and Asian IPOs, I created the variable *Europe* that equals 1 if the IPO's target market is a European country.

3.3 Methodology

To analyse the collected data, I will use Ordinary Least Squared regressions. OLS is a statistical method used to estimate the equation and the parameters that affect a certain dependent variable. In this thesis, I will use *WC listing* as the independent variable, and the *First day/week/month returns*, *Adjustment*, and *BH returns* as dependent variables. I will start with a standard univariate regression, and then progressively add the control variables to prevent omitted variable bias. It is worth noting that I will log-transform *MV* and *BV/MV* when using them as control variables to prevent bias due to outliers.

Additionally, I will include an interaction effect between *WC listing* and *WC filing* to account for IPOs filed and issued during a World Cup. Throughout the analysis, I will mostly use high-dimensional fixed effects to control for the TRBC economic sector, as a proxy for industry, and issue year since they may affect returns. However, I will start with only robust standard errors for the univariate analyses of short-term returns and price adjustments. I will use subsamples of European IPOs and IPOs issued in the summer for the robustness analysis of short-term returns and price adjustments.

After running the analysis, I will make use of Propensity Score Matching (PSM) to match each World Cup IPO to a non-World Cup IPO in terms of *Issue year*, *MV*, and *BV/MV* to account for the imbalance in observations of the two samples, which may potentially affect the coefficients. PSM is a statistical method used to estimate the effect of a certain treatment by matching them based on specific covariates. Contrary to OLS, PSM does not consider a linear relationship but calculates the treatment effect (Benedetto et al., 2018). I will consider World Cup issues as the treatment group in this thesis.

CHAPTER 4 Results

4.1 The World Cup Effect on Short-Term Returns

I will start the analysis with the relationship highlighted in the first hypothesis H1. It states that IPO issues during the World Cup have lower short-term returns than non-World Cup IPOs. Table 3 shows the results of the regression analyses with *First day return* and *First month return* as dependent variables. Results for the IPO returns analyses after 1 and 2 weeks can be found under Appendix A, and show the same trend as for first-day and month returns.

Table 3: The World Cup Effect on IPO Short-Term Returns

Variable	First day return			First month return		
	Univariate (1)	Control (2)	Interaction (3)	Univariate (4)	Control (5)	Interaction (6)
WC listing	0.035 (0.058)	0.060 (0.071)	0.026 (0.077)	-0.021 (0.068)	0.049 (0.076)	0.039 (0.084)
WC filing			-0.014 (0.073)			0.039 (0.079)
WC listing * WC filing			0.218 (0.195)			0.090 (0.211)
Ln (MV)		-0.050*** (0.011)	-0.050*** (0.011)		-0.003 (0.012)	-0.004 (0.012)
Ln (BV/MV)		-0.066*** (0.018)	-0.065*** (0.018)		-0.032 (0.020)	-0.033* (0.020)
Overhang		0.017*** (0.005)	0.017*** (0.005)		0.016*** (0.006)	0.016*** (0.006)
PE Backed		0.060 (0.061)	0.062 (0.061)		0.070 (0.066)	0.071 (0.066)
VC Backed		0.011 (0.024)	0.009 (0.024)		0.041 (0.026)	0.041 (0.026)
Summer		0.022 (0.027)	0.024 (0.028)		-0.043 (0.029)	-0.047 (0.030)
Europe		-0.177*** (0.055)	-0.182*** (0.055)		-0.077* (0.041)	-0.078* (0.041)
Constant	0.180*** (0.011)	0.284*** (0.055)	0.313*** (0.072)	0.115*** (0.012)	0.042 (0.060)	0.042 (0.059)
N° Obs	732	731	731	732	731	731
Issue year fe	No	Yes	Yes	No	Yes	Yes
Economic sector fe	No	Yes	Yes	No	Yes	Yes
Adj. R ²	0.000	0.123	0.121	0.001	0.076	0.074

Note. Numbers show the coefficients after uni- and multivariate regression analyses. *Proceeds* and *Listing time* were also used as control variables; however, they were removed as their coefficients were always insignificant and equal to 0. 10%, 5%, and 1% significance levels are described as *, **, and ***, respectively. Standard errors are in parentheses.

Columns (1) and (4) show the univariate regression with the coefficients not statistically significant at any level. Column (2) shows the introduction of control variables and fixed effects for year and sector in the analysis of *First day return*. The coefficient of *WC listing* is still not statistically significant at any level, meaning there is not enough evidence to prove the effect of the FIFA World Cup on IPO first-day returns. However, I found that *MV*, *BV/MV*, and *Europe* have a negative effect on the dependent variable, which is significant at the 1% level. This means that the first-day return is on average lower for IPOs with higher

market values and book-to-market ratios. Also, it follows that European IPOs show on average lower returns the first day after the issue. When introducing an interaction effect between *WC listing* and *WC filing*, the coefficients and significance of the other variables remain the same. *Overhang* is positive and significant at the 1% level, meaning that the more shares the owners retain, relative to the shares offered, the higher the first-day returns. The coefficient of the interaction effect is not statistically significant at any level, so there is not enough evidence to prove that it affects first-day returns.

For *First month return*, the coefficient of *WC listing* is not statistically significant at any level in any of the three models, meaning there is not enough evidence of an effect of the World Cup on IPO returns after the first month. The effect of some control variables is different than *First day return*. *MV* is not statistically significant at any level, and *BV/MV* is significant at the 10% level when adding an interaction effect between *WC listing* and *WC filing*. *Overhang* is positive and significant at the 1% level, leading to the same interpretation as for first-day returns. The effect of *Europe* is still negative and significant at the 10% level, meaning that European IPOs have lower returns after a month.

Table 4 shows robustness checks for the two cases, using two subsamples consisting of Summer IPOs, (1) and (4), and European IPOs, (2) and (5). Columns 3 and 6 show the treatment effect by using Propensity Score Matching (PSM) in the full sample, matching based on issue year, *MV*, and *BV/MV* as Fjesme et al. (2023).

Table 4: IPO Short-Term Returns Robustness Checks

Variable	First day return			First month return		
	Summer (1)	Europe (2)	PSM (3)	Summer (4)	Europe (5)	PSM (6)
WC listing	0.082 (0.085)	0.049 (0.115)	0.037 (0.094)	0.050 (0.090)	0.066 (0.182)	-0.018 (0.108)
Ln (MV)	-0.070** (0.027)	0.029* (0.016)		-0.019 (0.028)	0.026 (0.026)	
Ln (BV/MV)	-0.073* (0.039)	-0.015 (0.028)		-0.016 (0.041)	-0.002 (0.044)	
Overhang	0.014 (0.013)	0.014* (0.008)		0.007 (0.013)	0.004 (0.012)	
PE Backed	0.046 (0.127)	-0.029 (0.047)		0.044 (0.134)	0.012 (0.074)	
VC Backed	0.010 (0.055)	-0.046 (0.040)		-0.008 (0.058)	-0.121* (0.063)	
Summer		-0.002 (0.037)			-0.039 (0.059)	
Europe	-0.259*** (0.077)			-0.102 (0.081)		
Constant	0.402*** (0.127)	0.134 (0.093)		0.133 (0.134)	-0.055 (0.148)	
N° Obs	175	80	732	175	80	732
Issue year fe	Yes	Yes	-	Yes	Yes	-
Economic sector fe	Yes	Yes	-	Yes	Yes	-
Adj. R ²	0.105	0.123	-	-0.009	0.055	-

Note. *Proceeds* and *Listing time* were also used as control variables; however, they were removed as their coefficients were always insignificant and equal to 0. (1) and (4) use the subsample of only IPOs that were issued during June, July, and August, while (2) and (5) use the subsample of European IPOs. (3) and (6) show the treatment effect following Propensity Score Matching in terms

of issue year, *MV*, and *BV/MV*. 10%, 5%, and 1% significance levels are described as *, **, and ***, respectively. Standard errors are in parentheses.

For *First day returns*, the coefficients of *WC listing* remain statistically insignificant at any level, meaning that we cannot draw any conclusions for this variable based on these models. The treatment effect after doing PSM is insignificant, further arguing that there is no significant difference between World Cup and non-World Cup IPO first-day returns. European IPOs seem to have a negative effect on first-day returns for Summer IPOs, significant at the 1% level. This means that, during Summer, European IPOs have on average lower first-day returns. Furthermore, *MV* has a negative effect on first-day returns in Summer IPOs, significant at the 5% level. This effect becomes positive when using the European sample, however, it is only significant at the 10% level. Thus, in terms of *MV*, there is an effect on first-day returns, however, the sign is inconclusive.

For *First month returns*, no coefficients are statistically significant, meaning no conclusions can be drawn from these models. The treatment effect after doing PSM is insignificant, further arguing that there is no significant difference between World Cup and non-World Cup IPO first-month returns. The only exception is *VC backed*, which has a negative coefficient significant at the 10% level in the European sample. This means that, in Europe, a VC-backed IPO is likely to have a lower underpricing. The negative adjusted R² in the Summer sample suggests that the model has no predictive power.

Overall, evidence suggests that there is not enough statistical evidence to confirm or deny that World Cup issues have lower short-term performance compared to non-World Cup IPOs. Evidence from returns after 1 and 2 weeks supports this (Appendix A, Table 7). There is, however, an indication of lower short-run returns of IPOs in Europe. Also, the models support that *Overhang* has a statistically significant positive effect on short-run returns, meaning the more shares the owners retain, relative to the shares offered, the higher the first-day and month returns.

4.2 The World Cup Effect on IPO Long-Term Performance

To test H2, I will analyse buy-and-hold returns if the stock was bought after one month of the issue date. Table 5 shows the analysis of 6- and 12-month returns, while Table 8 in Appendix B shows the results of 2- and 3-month returns. I segmented the full analysis into three stages for each dependent variable: (1) and (4) show the full model with control variables, (2) and (5) show the coefficients when an interaction effect is included, and (3) and (6) show the treatment effect after doing PSM.

Table 5: The World Cup Effect on IPO Long-Term Returns

Variable	BH6mo			BH12mo		
	Full (1)	Interaction (2)	PSM (3)	Full (4)	Interaction (5)	PSM (6)
WC listing	-0.116 (0.075)	-0.173** (0.082)	-0.121 (0.089)	-0.045 (0.088)	-0.048 (0.096)	-0.012 (0.085)
WC filing		-0.051 (0.078)			0.099 (0.091)	
WC listing * WC filing		0.358* (0.207)			0.062 (0.243)	

Ln (MV)	0.008 (0.012)	0.006 (0.012)		0.014 (0.014)	0.014 (0.014)	
Ln (BV/MV)	0.033* (0.019)	0.035* (0.019)		0.066*** (0.022)	0.064*** (0.022)	
First day return	-0.051 (0.040)	-0.054 (0.040)		-0.166*** (0.047)	-0.167*** (0.047)	
PE backed	-0.041 (0.065)	-0.038 (0.065)		-0.006 (0.076)	-0.002 (0.076)	
VC backed	-0.037 (0.025)	-0.040 (0.025)		-0.089*** (0.030)	-0.091*** (0.030)	
Summer	-0.042 (0.040)	-0.035 (0.029)		0.001 (0.033)	-0.009 (0.034)	
Europe	0.063 (0.040)	0.053 (0.057)		0.101** (0.047)	0.099** (0.047)	
Constant	-0.023 (0.057)	-0.020 (0.057)		-0.104 (0.067)	-0.105 (0.067)	
N° Obs	731	731	732	731	731	732
Issue year fe	Yes	Yes	-	Yes	Yes	-
Economic sector fe	Yes	Yes	-	Yes	Yes	-
Adj. R ²	0.045	0.046	-	0.087	0.087	-

Note. *Proceeds* and *Listing time* were also used as control variables; however, they were removed as their coefficients were always insignificant and equal to 0. (3) and (6) show the treatment effect following Propensity Score Matching in terms of issue year, MV, and BV/MV. 10%, 5%, and 1% significance levels are described as *, **, and ***, respectively. Standard errors are in parentheses.

For *BH2mo*, *BH3mo*, and *BH12mo* the results are similar. There is no statistical evidence of an effect of *WC listing* on returns. This means that, in all three cases, we cannot draw any conclusions based on these models. As for control variables, *BV/MV* has a consistently significant positive effect on BH returns. This means that the higher the book value relative to the market value, i.e. the more undervalued the stock is, the higher the BH returns. The models also show a significant negative effect of first-day returns on BH returns. This means that the higher the underpricing, the lower the long-term returns.

For *BH6mo*, the results are different. When including an interaction effect in the full model, the coefficient of *WC listing* is negative and statistically significant at the 5% level. This means that, for World Cup IPOs, 6-month buy-and-hold returns are on average lower than non-World Cup IPO returns. The coefficient of the interaction is positive and statistically significant at the 10% level. This means that IPOs both filed and listed during a World Cup have on average higher returns. The model would look like the following equation:

$$\begin{aligned}
 BH6mo_{it} = & \beta_0 + \beta_1 * WClisting_i + \beta_2 * WCfiling_i + \beta_3 * (WClisting \times WCfiling)_i + \beta_4 \\
 & * Ln(MV)_i + \beta_5 * Ln\left(\frac{BV}{MV}\right)_i + \beta_6 * Firstday_i + \beta_7 * PEbacked_i + \beta_8 * VCbacked_i \\
 & + \beta_9 * Summer_i + \beta_{10} * Europe_i + \alpha_i + \gamma_t + \epsilon_{it}
 \end{aligned}$$

The coefficient of the interaction effect contradicts H2, which is why I used PSM to test the robustness of this effect. The treatment effect is not statistically significant at any level, meaning I cannot make any conclusive statements based on these effects.

Overall, the results suggest a negative significant effect (at the 5% level) of the World Cup for 6-month buy-and-hold returns when including an interaction effect between *WC listing* and *WC filing*. However, for

2-, 3-, and 12-month returns, there is no statistical evidence of a World Cup effect. This might suggest that the results for *BH6mo* are outliers or biased. There is room for debate within this analysis, which will be discussed in Section 5.

4.3 The World Cup Effect on Price Adjustment

To test H3, I will analyse the effect of the *WC listing* and *WC filing* dummies on price adjustment. Table 6 shows the analysis for (1) the univariate regression, (2) the inclusion of an interaction effect, (3) the inclusion of control variables, (4) the full model and the interaction effect, (5) the European sample, and (6) the PSM treatment effect.

Table 6: The World Cup Effect on IPO Price Adjustment

Variable	Adjustment					
	Univariate (1)	Interaction (2)	Full (3)	Full + Interaction (4)	Europe (5)	PSM (6)
WC listing	0.050* (0.023)	0.068** (0.032)	0.044 (0.030)	0.055* (0.033)	0.036 (0.107)	0.079*** (0.030)
WC filing		-0.006 (0.030)		-0.018 (0.031)	-0.121 (0.125)	
WC listing * WC filing		-0.124 (0.082)		-0.077 (0.083)		
Ln (MV)			-0.004 (0.005)	-0.004 (0.083)	-0.007 (0.012)	
Ln (BV/MV)			-0.015** (0.008)	-0.015* (0.008)	0.002 (0.021)	
Overhang			0.000 (0.002)	0.000 (0.002)	-0.006 (0.006)	
PE backed			-0.020 (0.026)	-0.021 (0.026)	-0.071** (0.035)	
VC backed			-0.001 (0.010)	0.000 (0.010)	-0.039 (0.030)	
Summer			0.013 (0.011)	0.014 (0.012)	-0.009 (0.028)	
Europe			-0.069*** (0.016)	-0.067*** (0.016)		
Constant	0.016*** (0.005)	0.016*** (0.005)	0.024 (0.023)	0.024 (0.023)	0.044 (0.071)	
N° Obs	732	731	731	731	80	732
Issue year fe	No	Yes	Yes	Yes	Yes	-
Economic sector fe	No	Yes	Yes	Yes	Yes	-
Adj. R ²	0.005	0.017	0.040	0.039	-0.086	-

Note. (4) uses the subsample of only IPOs that were issued during June, July, and August, while (5) uses the subsample of European IPOs. (6) shows the treatment effect following Propensity Score Matching in terms of issue year, MV, and BV/MV. 10%, 5%, and 1% significance levels are described as *, **, and ***, respectively. Standard errors are in parentheses.

The univariate analysis shows a positive effect of *WC listing* on *Adjustment*, significant at the 10% level. After adding the interaction effect and year and sector fixed effects, the coefficient increases and becomes significant at the 5% level. This means that World Cup IPOs have on average a higher price adjustment than non-World Cup IPOs, which is the opposite of what H3 posits. When accounting for the control variables and no interaction effect, the coefficient becomes insignificant at any level. However, when

accounting for both controls and the interaction effect, there is a positive effect of *WC listing* on *Adjustment*, significant at the 10% level. Robustness analysis in (5) with the European sample is not relevant for two reasons. Firstly, there are no observations to control for the interaction effect of *WC listing* and filing, and secondly, the adjusted R² is negative, meaning the model has no predictive power. The PSM analysis in (6) shows a positive treatment effect of *WC listing* on *Adjustment*, significant at the 1% level. Therefore, the appropriate model is the one in column (4); it has a relatively high adjusted R² and the relevant variables for the analysis. It looks as follows:

$$\begin{aligned}
 Adjustment_{it} = & \beta_0 + \beta_1 * WClisting_i + \beta_2 * WCfiling_i + \beta_3 * (WClisting \times WCfiling)_i + \beta_4 \\
 & * Ln(MV)_i + \beta_5 * Ln\left(\frac{BV}{MV}\right)_i + \beta_6 * Overhang_i + \beta_7 * PEbacked_i + \beta_8 * VCbacked_i \\
 & + \beta_9 * Summer_i + \beta_{10} * Europe_i + \alpha_i + \gamma_t + \epsilon_{it}
 \end{aligned}$$

CHAPTER 5 Discussion & Limitations

5.1 Discussion

For the first hypothesis, I posited that World Cup IPOs have lower short-term returns. My results showed that there is no significant effect of the FIFA World Cup on IPO returns after a day, a week, 2 weeks, and a month. This is supported by the multiple robustness checks with two different subsamples and with the PSM analysis of the treatment effect. These findings are related to those by Lee & Chiu (2016), and contradict Fjesme et al. (2023), in the sense that sports sentiment seems to have no effect on returns. This may be related to the different contexts studied. In my case, I studied Asia and Europe, while Fjesme et al. studied IPOs in the US. It is therefore likely that the World Cup has a different effect depending on location or target market. Another plausible explanation is the effect of foreign ownership. Fjesme et al. (2023) attribute the effect of the World Cup to lower attention and sentiment of foreign investors. These investors, as they do not come from the US, are likely to be of European or Asian origin, meaning that the effect of the World Cup may be different because the market already considers external factors within their pricing. This explanation is in line with Ljungqvist (2007), who finds that asymmetric information may not be the only explanation for IPO underpricing, especially if the market is volatile.

For the second hypothesis, I suggested that World Cup IPOs have higher long-term returns. My results showed that there is, in general, there is no statistically significant effect of the World Cup on IPO long-term returns. This is the case for returns if the stock price was bought after one month of the issue and sold after 2, 3, and 12 months of the issue. For the returns after 6 months, there is a negative and statistically significant effect of the World Cup when an interaction effect is added, which is the contrary effect compared to the hypothesis. This means that World Cup IPO returns are on average lower than non-World Cup IPO returns at the six-month mark. However, as returns after 2, 3, and 12 months of the issue were not statistically significant, the results of returns after 6 months may be either outliers or biased. Fjesme et al. (2023) found that World Cup issues have higher long-term performance due to a lower attention and sentiment in the short-term, meaning that there is a more significant reversal in the long run. This contradicting effect can be explained due to a possible higher demand of IPO shares after the World Cup. Following Derrien's (2005) findings, IPO shares demand negatively affect long-term performance, thus, an increase in the demand for shares would lead to lower returns in the long-term. However, due to not finding significant evidence for returns after 2, 3, and 12 months and the insignificant effect of the PSM analysis, more research needs to be done to prove such an effect after 6 months for IPOs in Europe and Asia.

For the third hypothesis, I postulated that World Cup IPOs have lower price adjustments. My results showed the opposite of what was expected. They suggest that there exists a significant positive effect of the World Cup on price adjustment. The PSM analysis for robustness supports this relationship with a positive treatment effect of *WC listing*. Although this does not hold with the Europe subsample, this may be explained due to the missing observations of IPOs which were both issued and filed during the World Cup. These findings suggest that World Cup issues show on average a higher partial adjustment of prices, due to either a lower filing price or a higher offer price. As there was no evidence suggesting higher

underpricing, it is more likely that this occurs due to a difference in the filing price. This is consistent with the hypothesis of Hoberg (2007), who suggested high-pricing underwriters “low-balling” their mid-file price, though he did not find specific evidence that supported this explanation. This leads to contrary results from Fjesme et al. (2023). It is possible that more research needs to be done to draw any concrete conclusions on this topic.

5.2 Limitations & Future Research

A potential limitation of this study is the limited data available for Europe. Only 80 observations were identified which had full financial information available in Datastream. It would be interesting to test this again in 5 years when more data is available for Europe. Furthermore, I did not have access to ownership data, which is a key point highlighted in studies such as Fjesme et al. (2023). Even if I tried countering this effect by using more than one region and multiple countries, the omission of this variable may cause omitted variable bias in the OLS models. This is also the case with the pre-market returns for matching comparable firms, which I could not gather due to the processing power of my personal computer. Potentially, having access to more databases, waiting for future European IPO data, and using a computer with a better operating system would lead to different results for the analysis of Europe and Asia.

This idea is key for future research. Leaving out US data and using data from diverse countries can yield different results. Cultural differences are of the utmost importance when analysing sentiment and attention, which are the key characteristics studied for the World Cup effect. I believe that IPO data for other regions is being developed, but not much is being studied. It is possible that there may not be enough data to run a proper analysis; however, there can be indications and interesting findings, such as the ones explored in this thesis.

CHAPTER 6 Conclusion

In this thesis, I studied the relationship between the FIFA World Cup and IPO returns in the European and Asian markets. Previous research suggests that World Cup IPOs have lower underpricing and price adjustment due to less investor attention and sentiment. This would lead, in turn, to a larger price reversal in the long run. However, the literature focuses almost exclusively on the US market. Hence, I decided to change approaches and analyse the IPO market in Europe and Asia, despite there being less information than the US. The research question studied in this thesis was: *“How does the FIFA World Cup affect the IPO markets of Europe and Asia between 2003 and 2021?”*

To answer this question, I used a sample of 732 IPOs from both continents during the period between 2003 and 2021. With this information, I performed Ordinary Least Squares regressions with high-dimensional fixed effects and Propensity Score Matching to test the effects of the FIFA World Cup on IPO short- and long-term returns, as well as price adjustments. The analysis showed no statistical evidence of a World Cup effect on returns, while there is a significant positive effect on adjustment.

In conclusion, this study shows no evidence of a World Cup effect on IPO returns in Europe and Asia, contrary to previous findings with both IPO and stock market returns. It also contradicts the literature in terms of the positive relationship with adjustment. However, as no relationship with underpricing was found, research supports the interpretation that underwriters set a lower filing price regarding a global event. This further supports the existing belief that high-price underwriters have more information and that there is an effect of information asymmetry on price adjustment. However, there exists a possibility of omitted variable bias due to not including data about ownership and pre-market returns.

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APPENDIX A Additional Tables

Table 7: The World Cup Effect on First- and Second-Week Returns

Variable	First week return			First 2 weeks return		
	(1)	(2)	(3)	(4)	(5)	(6)
WC listing	0.061 (0.064)	0.097 (0.070)	0.068 (0.076)	0.035 (0.062)	0.072 (0.070)	0.050 (0.077)
WC filing			-0.011 (0.072)			0.004 (0.073)
WC listing * WC filing			0.195 (0.191)			0.153 (0.194)
Ln (MV)		-0.026** (0.011)	-0.026** (0.011)		-0.018 (0.011)	-0.018 (0.011)
Ln (BV/MV)		-0.045** (0.017)	-0.045** (0.018)		-0.037** (0.018)	-0.037** (0.018)
Overhang		0.016*** (0.005)	0.016*** (0.005)		0.015*** (0.005)	0.015*** (0.005)
PE Backed		0.067 (0.060)	0.069 (0.060)		0.041 (0.060)	0.043 (0.061)
VC Backed		0.019 (0.024)	0.018 (0.024)		0.023 (0.024)	0.022 (0.024)
Summer		0.007 (0.026)	0.008 (0.027)		-0.020 (0.027)	-0.020 (0.028)
Europe		-0.126*** (0.037)	-0.130*** (0.037)		-0.102*** (0.038)	-0.106*** (0.038)
Constant	0.142*** (0.011)	0.159*** (0.054)	0.160*** (0.054)	0.125*** (0.011)	0.117** (0.054)	0.118** (0.054)
N° Obs	732	731	731	732	731	731
Issue year fe	No	Yes	Yes	No	Yes	Yes
Economic sector fe	No	Yes	Yes	No	Yes	Yes
Adj. R ²	0.000	0.098	0.099	0.001	0.078	0.077

Note. Numbers show the coefficients after uni- and multivariate regression analyses. *Proceeds* and *Listing time* were also used as control variables; however, they were removed as their coefficients were always insignificant and equal to 0. 10%, 5%, and 1% significance levels are described as *, **, and ***, respectively. Standard errors are in parentheses.

Table 8: The World Cup Effect on IPO Returns After 2 and 3 Months

Variable	BH2mo			BH3mo		
	Full (1)	Interaction (2)	PSM (3)	Full (4)	Interaction (5)	PSM (6)
WC listing	-0.000 (0.040)	-0.006 (0.043)	0.032 (0.038)	-0.009 (0.051)	-0.037 (0.056)	0.012 (0.046)
WC filing		-0.008 (0.041)			-0.070 (0.053)	
WC listing * WC filing		0.040 (0.110)			0.159 (0.142)	
Ln (MV)	0.013** (0.006)	0.013** (0.006)		0.007 (0.008)	0.007 (0.008)	
Ln (BV/MV)	0.032*** (0.010)	0.032*** (0.010)		0.024* (0.013)	0.026* (0.013)	
First day return	-0.048** (0.021)	-0.048** (0.021)		-0.087*** (0.027)	-0.088*** (0.027)	
PE backed	-0.042	-0.042		-0.075* (0.027)	-0.075* (0.027)	

	(0.034)	(0.034)		(0.044)	(0.044)	
VC backed	-0.016	-0.016		-0.022	-0.023	
	(0.013)	(0.014)		(0.017)	(0.017)	
Summer	-0.013	-0.012		-0.022	-0.014	
	(0.015)	(0.016)		(0.019)	(0.020)	
Europe	0.033	0.032		0.038	0.034	
	(0.021)	(0.021)		(0.039)	(0.028)	
Constant	-0.023	-0.023		-0.004	-0.001	
	(0.030)	(0.030)		(0.039)	(0.039)	
N° Obs	731	731	732	731	731	732
Issue year fe	Yes	Yes	-	Yes	Yes	-
Economic sector fe	Yes	Yes	-	Yes	Yes	-
Adj. R ²	0.028	0.026	-	0.038	0.038	-

Note. *Proceeds* and *Listing time* were also used as control variables; however, they were removed as their coefficients were always insignificant and equal to 0. (3) and (6) show the treatment effect following Propensity Score Matching in terms of issue year, MV, and BV/MV. 10%, 5%, and 1% significance levels are described as *, **, and ***, respectively. Standard errors are in parentheses.