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Master Thesis Report

The Effects of Underwriter Characteristics on the Performance of Special Purpose Acquisition Companies

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Abstract

This thesis seeks to address the effect of underwriter characteristics on the performance of SPAC deals. A substantial growth in the SPAC market has been observed over the later years, and little existing research is done on the topic. The study is conducted on SPACs in the United States and Canada after 2015, and examines the effects of underwriter reputation, experience, syndicate structure and time spent on closing a deal. Our findings imply that a better underwriter reputation increases short-term returns, however, interestingly, that it is not a reliable indicator for the long-term returns. Further, we found that the syndicate structure has no impact on the returns, as opposed to some earlier research. Lastly, we find some interesting previously undocumented relationships between the time used from SPAC IPO to deal close, the returns and the experience. We found that much of the effect from the time variable on returns stem from the underwriter experience; however, experience does not explain all of the effect.

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Preface

We hereby present the thesis "The Effects of Underwriter Characteristics on the Performance of Special Purpose Acquisition Companies", of which is based on American and Canadian SPACs after 2015. It has been written to fulfil the graduation requirements of the Master of Science in Business program, specialising in finance. It has been written in the period January to June 2022.

We stand in recognition to our supervisor, Adam Walter Winegar, for valuable guidance and insights throughout our work with this thesis. His knowledge and interest in the SPAC market has been of great value to us.

We would also like to show gratitude to our institution, BI Norwegian Business School, and their knowledgeable professors for providing us with the essential knowledge and tools to complete our studies.

Lastly, we wish to direct thanks to our friends, family and colleagues, of which have all been of great support and motivation to us during this research period.

We hope that you enjoy and find interest in your reading.

Best,

Malin and Julie

Oslo, June 2022

1 Introduction

A Special Purpose Acquisition Company (SPAC) is a relatively new financing tool which have become rapidly popular since 2016. Since then, the concept has grown rapidly in terms of both SPAC Initial Public Offerings (IPOs) and the amount of money they raise. SPACs are blank check companies with no operations raising capital through IPOs, with the purpose of using the proceeds to acquire or merge with private companies. The acquired company will then effectively take the SPAC's place in the stock market (Santilli & Ramkumar, 2021). This method for going public is appealing to both investors and the target companies wishing to go public, for example because it is usually much quicker than regular IPOs, and the SPACs already have a long-term investor base in place due to contact networks. Hence, there is no need to convince potential investors at a roadshow. This allows the SPAC to get assurances from investors early on and not the night before, as in an IPO (Metinko, 2020). The management team of the SPAC has a significant upside, as they can make hundreds of millions of dollars regardless of how well the acquired company does after going public (CB Insights, 2020). However, empirical research has shown that SPAC investors' returns have been significantly lower than that of the market, industry, and comparable IPO stocks when tracking long-term abnormal returns. Despite this, the occurrence of SPACs is rapidly increasing and is a growing trend in the current stock markets (Kolb & Tykvová, 2016; Santilli & Ramkumar, 2021)[1].

There is a large body of research on IPOs, but less on SPACs. Most of the research on SPAC IPOs regard the general characteristics of the SPACs, e.g., costs and returns compared to the traditional IPO market, and general theory and practice of the matter. An aspect of the SPAC process we find particularly interesting, in addition to being under-researched, is the role of and effect that the underwriting investment bank brings to the deals. That is, does the underwriter's different characteristics, like reputation, experience, syndicate structure, and time spent, affect the performance of the SPAC in the short and long term? In this thesis, we wish to provide answers to these questions

[1] SPACs grew rapidly through 2021, however their pace has slowed significantly during the recent market turmoil in 2022.

and thereby contribute to expanding the existing literature on the growing SPAC market.

During our work with this thesis, we find that the underwriters' market shares, which were measured using the Megginson-Weiss (MW) measure, are positively correlated with returns in both the short and long run. Further, we find that underwriter experience in terms of absolute deal count and deal volume has a positive correlation on short-term returns, however a negative correlation on long term returns. These results are inconsistent with the MW market share mentioned above. The results for the absolute values of deal count and deal volume imply a reversal, meaning that investors believe that a more experienced underwriter indicates higher quality transactions. However, that the initial effect wears off and the market may have put too much faith in the underwriter in the long term. Hence, the market learns that skill and reputation of the underwriter are less important for SPACs relative to what one might expect for traditional IPOs.

Further, we find that the syndicate composition of the SPACs had no significant effect on the deal outcome, and therefore that our focus on the lead underwriter is defendable. Lastly, we examine the relationships between the time used from SPAC IPO to deal close, returns and experience. We first find that the longer time used to close a deal, the worse were the returns. However, when controlling for lead underwriter fixed effects, we interestingly observed that the effects were biased. This led us to examining whether it is really the experience of the underwriter who drives the amount of time spent from IPO to deal close, which then consequently drives the implied relationship between time used and returns. We find that this was partly the case, however there is still a separate effect from time used on returns that is not related to experience. That is, underwriter experience is strongly negatively correlated to the time used from IPO to deal close. However, as the coefficients are still unchanged, one can state that the experience does not explain the whole relationship between time used and returns. Hence, there is a separate effect from time used from IPO to deal close on the returns that is not related to experience.

2 Literature Review

This chapter will provide theoretical perspectives and background on different processes of M&A and going public. We will discuss the motives companies have for going public, the processes of doing so through SPACs versus traditional IPOs, as well as the history and characteristics of SPACs. Further, we will elaborate on what role the underwriter has in a public offering and how their characteristics can affect the returns of an IPO.

2.1 Why do firms go public?

First, we should assess and understand why firms wish and choose to go public. Often, the desire to raise equity capital for the firm and to stimulate entrepreneurial and venture capitalist activities is the driving force for seeking to go public. In addition, creating a public market in which the founders and shareholders can convert some of their wealth into cash at a future date, i.e., liquidity motive, is also of key importance (Ritter & Welch, 2002; Zingales, 1995). Earlier, the decision to go public was simply considered a stage in a corporation's growth process. Even though there is some truth to this, it cannot alone explain the observed patterns of public listing. For example, large private companies exist, and there are countries where publicly traded companies are less common and often averagely smaller than a few private companies (Pagano, Panetta, & Zingales, 1998). These differences across sectors and countries imply that going public is not necessarily a stage that all companies eventually reach, but rather a choice they make. This leads us to further question why some companies use public equity markets while others do not.

2.1.1 Benefits of going public

Pagano, Panetta & Zingales (1998) outline several motives companies have for going – and not going – public in their analysis. The decision is complex, and no model can singlehandedly capture all relevant costs and benefits. However, they find that the most crucial motive to get publicly listed, probably most cited within the literature, is overcoming borrowing constraints through access to external capital. Firms wishing to finance existing or new projects without having the sufficient capital need to seek external financing. Companies may raise equity capital from public stock markets

instead of obtaining capital from banks, venture capitalists, or private equity investors. Further, the authors present motives such as increased bargaining power in bank loan negotiations, liquidity and portfolio diversification, incentives for monitoring, investor recognition, change of control and windows of opportunity. Summarising, the authors find that companies appear to go public not to finance future investments and growth, but rather to rebalance their accounts after a period of high investment and growth. They conclude that following IPOs there is a reduction in the firm's cost of credit and an increase in the likelihood of changes in control, potentially favourable developments for any company.

2.1.2 Costs of going public

There are also costs entailed to going public, which explains why not all companies with the intention of growth wish to get publicly listed. Pagano et al. (1998) also outline the costs of getting publicly listed. These costs revolve around both monetary one-time and continuing costs related to the IPO decision, as well as the costs regarding the loss of information privacy and competitive advantage of a company.

The challenge of adverse selection and informational asymmetry adversely affects the average quality of the companies seeking a new listing and, thereby, the price at which their shares can be sold. Hence, the level of underpricing needed to sell the shares increase. This cost is an obstacle more relevant for young and small companies with little track record and visibility than for older and larger companies. This entails that, in the presence of adverse selection, the probability of a company going public should be positively correlated to the age and size of a company.

Further, there are administrative expenses and fees involved when going public. On top of the considerable initial expenses like underwriting and registration fees, there are several continuous costs. These relate to the obligation to periodically supply information to regulators, stock exchanges, and investors, like auditing, certification, and disseminating accounting information and stock exchange fees. Most of these expenses do not increase proportionally with the size of the IPO, hence being relatively costlier for smaller companies. This again suggests that the existence of fixed costs of listing implies that the likelihood of an IPO should be positively correlated to company size (Pagano, Panetta, & Zingales, 1998).

A last consequence of going public is the disclosure rules of stock exchanges forcing companies to unveil information whose secrecy may be crucial for their competitive advantages, such as data about ongoing projects or future strategies. These firms also expose themselves to scrutiny from tax authorities, reducing their scope for tax elusion and evasion relative to private companies. Campbell (1979) and Yosha (1995) argue that the loss of confidentiality serves as a deterrent to getting funding in public markets and, in equilibrium, firms with more sensitive information are deterred from going public if the costs of a public offering are sufficiently high.

Hence, there are both benefits and costs a company should account for when considering publicly listing. For our further discussion, there are several strategies to implement in order to publicly list. The most common strategies are traditional IPOs, direct public offerings, self-underwritten IPOs and reverse mergers, of which the latter applies to a SPAC transaction. In our thesis, we will elaborate on traditional IPOs and SPACs only. In the following sections, we will discuss the traditional IPO and SPAC processes and how they both differ and coincide.

2.2 The Traditional IPO Process

For most firms, the standard method to go public is through an IPO. IPOs involve a private corporation offering shares to the public in a new stock issuance. The process of a regular IPO is complex and time-consuming and requires much interaction with external advisors, regulators, and potential investors (Slomp, 2009). Once a company has decided to go public, they hire underwriters and legal advisors, who will manage the IPO process and assist the firm with deal structuring, financial modelling, marketing activities and such, for a given fee of the IPO proceeds, usually 7 percent (Chen & Ritter, 2000). Further, the companies must meet requirements by exchanges and the Securities and Exchange Commission (SEC) to hold an IPO. Once the company's final registration statement has been approved, they can launch the marketing program by sending its prospectus to financial intermediaries and institutional investors. A "road show" will then be initiated, in which the firm's management presents the company to the investment community. The road show allows the underwriters to initiate "book building" and gauging the demand for the company from potential investors. Specifically, during the book build process, the

underwriters receive indications of interest from informed potential investors, helping them to determine aspects like what the offer price should be and the number of shares to offer (Ritter & Welch, 2002). When these terms are determined, the underwriter and the issuing firm execute the underwriting agreement, and the underwriter files a "price amendment" with the SEC for the selected listing date. This is the date when the firm's now publicly listed stock opens for trade for the first time. The transaction is closed when the company stock is listed and the underwriter transfers the proceeds from the IPO to the issuing company (Slomp, 2009).

2.3 The SPAC Process

A SPAC is, by definition, a newly formed shell or blank check company with no operating business and minimal assets, which has been formed to raise capital through an initial public offering for the sole purpose of acquiring one or more yet unidentified operating businesses within a specified period of time (Hale, 2007). SPACs are usually founded by small teams of experienced and successful industry experts and investment bankers. The team is often referred to as sponsors, who wish to create value by acquiring undervalued and private companies. The responsibility of the sponsors is to find an attractive target firm they can acquire with the capital raised in the IPO of the SPAC. Attractive characteristics of such target firms are that they are large and stable enough to survive as a publicly listed company; however, they may face difficulties doing an IPO or obtaining private equity funding on their own (Slomp, 2009).

Once the SPAC is live on the stock exchange, it allows an issuer to solicit funds without releasing information about its intended target. The SPAC is funded by investors purchasing units that typically include one share of common stock at the cost of $10 and one in-the-money warrant with a strike price of $7 or $7.50. The prices are standardized as the SPAC IPO price is not based on a valuation of an existing business, as opposed to a traditional IPO. The warrant has no voting rights, whereas each share of ordinary stock has one vote (Berger, 2008). The IPO proceeds are held in a trust account until the SPAC either consummates a business combination or liquidation. After the completion of the SPAC IPO, the sponsors are left with ownership of approximately 20 percent of the SPAC. The sponsors and initial shareholders buy their shares at a significant discount, often close to 100 percent, in a private placement prior

to the IPO. As the sponsors will not receive any salaries or management fees, this structure serves as their compensation (Hale, 2007).

Once the sponsors have identified a preferred target company, they negotiate a deal with the target, and if the SPAC shareholders approve by voting, they will complete the business combination. Should the sponsors struggle to find attractive business combination opportunities within the specified period, the SPAC will be liquidated, and the ordinary stock will be repaid in total with interest. At the same time while the warrants will become worthless (SEC, 2021). In the case of liquidation, the SPAC sponsors or initial shareholders are not to participate in the distribution, and will therefore lose most of their upfront investment as well as the value of their time spent managing the SPAC in the intervening period (Hale, 2007). Hence, the sponsors have a strong incentive to complete a business combination before the deadline.

This structure presents a potential misalignment of sponsor and shareholder interest, as the sponsors get nothing in the case of liquidation. Hence, if the sponsors cannot find a suitable, value-increasing merger to pursue in the view of the investors, they still have incentives to search for deals of potentially lower quality. That is, the sponsors would rather pursue a value-destroying merger than to liquidate, which naturally would lead to losses for the investors (Klausner & Ohlrogge, 2022).

However, if the sponsors find a suitable target in good faith and the investors approve, then the deal is announced to the market. A proxy statement will then be filed with the SEC. Upon approval, the transaction is closed, and the merger of the target company into the SPAC results in a new publicly traded company. In practice, SPACs act as a temporary cashbox for locating merger targets and facilitating their entrance to public markets.

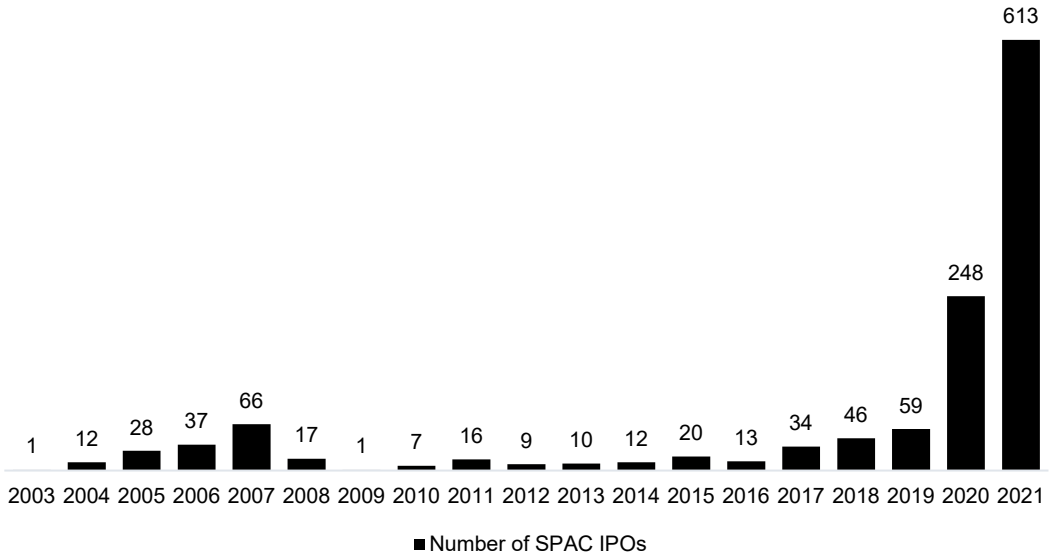
2.4 SPAC Market Dynamics

2.4.1 SPAC Evolution and Market Size

The first SPACs were introduced in the mid-1990s to effect reverse merger transactions. However, deal sizes were typically relatively small, seldom amounting to more than $5m. In the next decade, the IPO market receded, and SPACs were reintroduced as an attractive way for privately held companies to go public, as well as

a new method for experienced managers to raise permanent investment capital. Two decades later, SPACs have become one of the largest segments of the American IPO market, with approximately 600 IPOs in 2021 (Statista, 2022).

Figure 1: This figure reports the number of SPAC IPOs from 2003-2021 using data from Statista



Looking at the above figure 1, we can observe the evolution of SPACs and their growth from the early 2000s. During the financial crisis of 2008, the booming growth inevitably slowed down and did not resume until 2017. After 2020 however, the SPAC market has grown from being a rather small segment of the IPO market to represent around 50% of both the number of deals as well as capital raised, including issues well above $1b (Abreu, 2020; Statista, 2022).

2.4.2 Performance

The IPO market in the United States exploded in 2020, resulting in 61.9 billion dollars raised to the 165 companies going public through traditional IPOs during that year. The deal volume and funds raised by SPACs increased significantly, with a total of 75.3 billion dollars raised for the 248 SPAC IPOs, which is more than the preceding five years combined (Gahng, Ritter, & Zhang, 2021). The SPAC market share of total IPOs was above 60 percent in 2020, whilst before Covid in 2019, the percentage was below 30 percent. In addition, 35 percent of all deals of companies going public in 2021 were

a SPAC merger (Klausner, Ohlrogge, & Ruan, 2022). This portrays the huge growth in the SPAC market, which has enabled a broader landscape of raising funds in the public market.

Unfortunately, Kolb & Tykvová (2016) found that SPACs are associated with severe underperformance when compared to the market, industries or other comparable IPO firms. Ritter (2021) finds that SPACs have a mean initial return of 1.6 percent measured from the offer price to the first close in 2020, and that the average initial return from 2003 to 2020 was 1.1 percent. This is substantially lower than the mean initial return of IPOs, which is 38.3 percent in the same period, with an average of 17.3 percent. However, the listing company does not receive this return, but only the initial IPO proceeds. For them, the initial return represents money left on the table. Hence, the fact that SPACs are less commonly underpriced may be a good thing for the target firm, and it may enhance general welfare if the underpricing is due to the capture of economic rents by the underwriters/initial investors.

However, another study by Ritter, Gahng and Zhang (2021) shows that the average first-day return of 298 studied SPACs going public was 3.7 percent, which is a significant increase from the 1.6 percent average return in 2020. It is, however, still substantially lower than that of IPOs. This indicates a repricing of SPACs and lowering the abnormal returns for investors buying SPACs on the open market. This can also be found in regular IPOs for operating companies. That study also portrays that the first-day abnormal return vanishes in the second quarter of 2021, as the competition amongst other SPACs lowers the expected return.

2.4.3 Underpricing

A persistent pattern in IPO trading is that investors often are able to earn sizeable returns on the first day of trading. This IPO underpricing puzzle baffles researchers because it can be difficult to explain, and numerous studies attempt to rationalize this phenomenon. As SPAC IPOs are issued with standard prices, the aspect of underpricing is different in this market. Ritter et al. (2021) measures the underpricing of SPACs as the initial return from the $10, to the closing market price at the date when the merger is finalized. In a SPAC, the shares are sold for a standard given amount prior to the merger, often $10. If then the closing price of the company's shares on the

first trading day is $12, this is described as a 20 percent "pop" – and $2 of underpricing. However, as the sponsors are able to acquire their shares at a significant discount, the cash per share is lower than $10 minus underwriting fees. Consider, for instance, a SPAC raising $800 by selling 80 shares to the public, while providing 20 shares for free to the sponsors. Hence, we have a resulting dilution of 20 percent of pre-merger equity, amounting to $2 per share. The sponsors' shares are the same as the one sold to the public, valued to $10, amounting to $200. This is equal to 25% of the $800 pre-merger equity that the SPAC delivers to the target. That is, had the SPAC sold the shares given to the sponsor for $10, it could have raised 25 percent more (Klausner, Ohlrogge, & Ruan, 2022).

2.5 The Underwriter

Extensive research has been conducted on IPOs, and to some degree on SPACs. However, most of the studies examine the more general aspects of the processes, such as performance, acquisition likelihood and, survival post-merger (Abreu, 2020). There is limited academic research on the role of the underwriters, and how the quality of the underwriter can affect the outcome of a SPAC relative to what we might expect given the research on IPOs. SPACs have attained a somewhat bad reputation due to various reasons, such as bad average performance, fraudulence, or conflicts of interest, as mentioned earlier. However, due to the considerable growth in the SPAC market over the recent years, some of the traditional IPO markets' biggest underwriters sought entry and gained dominance in the SPAC market. When these highly respected investment banks with good reputations are increasingly involved in the SPAC market, it can function as certification and information production mechanism for an outside investor, making the market more attractive for entry (Klausner, Ohlrogge, & Ruan, 2022). Hence, the entry of more traditional IPO underwriters has potentially contributed to the exponential expansion observed in the SPAC market.

It is natural to believe that SPAC teams sealing the deal with a top-tier underwriter would help them gain credibility, making the acquisition project more attractive and therefore easier to sell stocks and warrants of the shell company. In our thesis, we wish to examine the extent of the effect of the underwriter's reputation and quality on the performance of a closed-deal SPAC in the short- and long run. To set a baseline of

knowledge, we will elaborate on the roles of the underwriters in IPO processes in the following sections.

There is a fair amount of literature on IPO underwriters and their roles. However, it is unclear whether this research would also apply in the SPAC market, as there is limited research on the role of the underwriter for SPACs. As the SPAC process does not coincide with the IPO process in all aspects, the underwriter of a SPAC will naturally have slightly different responsibilities than an IPO. For example, a SPAC IPO prices at standard prices and not according to the target company value, simply because the target company is undetermined at the time of the offering. This inherently takes away the process and analysis entailed in valuing the IPO. However, a SPAC underwriter will also function as an advisor and facilitator for the SPAC merger, and most of their responsibilities are the same in both strategies. Hence, due to the lack of existing research on the role of the underwriter in the SPAC market, we use previous research on IPO underwriters as a base for our thesis. Moreover, our thesis is intended to fill in this research gap.

2.5.1 The Role of the Underwriter

In the process of taking a company public, the lead underwriter is crucial, as it facilitates the whole process. The underwriter is the investment bank that buys the shares from the issuing company and then resells them to the public at the offering. The lead underwriter will further be responsible for coordinating the efforts of the underwriting syndicate. The underwriting syndicate can consist of several additional investment banks who act as a pool of resources, often for when an issue is too big for a single firm underwrite alone. We will nevertheless focus on the lead underwriter in the syndicate for the majority of our study, as this is the principal underwriter who does most of the work. The underwriter assists the company in preparing the registration statement, conducts the due diligence efforts, provides the initial draft of the underwriting and lock-up agreements, and leads the selling efforts. Therefore, the reputation of the underwriter the issuing company chooses will reflect upon them and might affect the outcome of the offering. The underwriter must therefore be carefully chosen. When determining which underwriter to hire, the issuing company evaluates criteria such as their general reputation, experience in marketing, knowledge of the

relevant business and market conditions, networks and knowledge of institutional and retail investors, prior relationships and as well as their resources (Orrick, 2020; Corwin & Schultz, 2005).

Our study seeks to add to the existing literature regarding the SPAC process, hereby especially the impact the SPAC underwriter has on a deal. Aspects of interest includes the effect of underwriter experience or market share on returns, whether a syndicate of several underwriters imply better deals, and whether the time used from SPAC IPO to deal close is an indication of post close performance.

3 Theoretical Background and Hypothesis Development

In the following sections, we will elaborate on the potential effects different characteristics of the underwriter may have on the SPAC performance. We will examine aspects like their reputation, their experience in terms of monetary deal volume and the amount of deals they have completed, as well as characteristics of the underwriter syndicate and the time they spend finding a target company. Further, in our analysis, we will examine if these following characteristics have a significant effect on the returns of the SPAC after the deal has closed.

3.1 Underwriter Reputation

A company's reputation is the public perception of the company and how it operates, and is the essential criteria when issuing firms determine which one to contract. Having an underwriter with a good reputation can potentially boost the further sale of the company stock, as the underwriter can contribute to the certification of the issuer's quality. However, reputation is an intangible quality, making it difficult to measure.

In the IPO literature, numerous proxies for measuring underwriter reputation have been developed. Amongst the first to construct a measure of underwriter repute were Logue (1973) and Beatty and Ritter (1986), closely followed by Carter and Manaster (1990) which introduced the more widely used Carter and Manaster ranking (CM). The CM ranking uses the relative placement of the underwriters in the stock offerings announcements, also known as tombstones. This document is an advertisement that contains the basic information regarding the upcoming IPO, including a segmented list of the composition of the syndicate. The appearance of the underwriters on the tombstone announcement determines the score, ranging from 1 to 9. A high score reflects a higher reputation of the underwriters. According to their studies, this analysis can lead to a respectably accurate measurement of the underwriter's relative reputation (Abreu, 2020).

However, this measure is not directly applicable for ranking SPAC underwriters. The primary reason it is not applicable is that the underwriters have additional responsibilities involving the active search process and negotiation. Thus, a ranking

that does not consider the experience in the SPAC market should not be considered as the entire measure for the underwriter reputation in this segment.

Therefore, to compute an underwriter reputation measure suitable for the SPAC market, we look to Megginson & Weiss (1998). Megginson & Weiss utilize the underwriters' relative market value of public offerings as a proxy for their reputation. The relative market share is determined by dividing the underwriter's total market value by the industry total. What we intend to discover by this, is whether an increase in market share implies higher returns in the short and long term. The MW metric shows a high degree of correlation with the CM ranking, and they are both said to be the measures most widely used in IPO literature (Carter, Dark, & Singh, 1998). We will be basing our underwriter reputation measure on the research of Megginson & Weiss, and will be calculating MW measures based on both the total deal volume of the underwriter as well as the total deal count – both in relation to the respective industry totals.

In the analysis, the main reputation measure is based on experience. We will also perform regressions using either only the absolute number of deals or the total volume of the deals the underwriter has completed. This analysis will be closely related to the analysis using the MW measure, as both analyses are based on the underwriters' individual deal count and sum – however, this analysis will not see them in relation to the market total. This is done to check for robustness, and we will also implement various controls to check for fixed effects.

3.2 Underwriter Syndicate

The biggest SPACs are sometimes too big for one single underwriter to take on alone. In these cases, several underwriters team up and pool their resources, creating a syndicate of multiple lead underwriters (MLUs). Recently, there has been a major change in the favoured lead underwriter structure. Vithanage, Neupane & Chung (2016) report that IPOs managed by MLUs in the US have increased from 6 to 93 percent of the IPO market total from 1999 to 2021. They found that IPOs priced by MLUs are priced closer to the intrinsic value than firms backed by single lead underwriters. These results are consistent with the notion that MLUs provide

certification to the issue and indicates that IPOs led by MLUs experience lower initial return, lower variability of initial returns and better long-run performance. We will also examine a potential effect of the syndicate structure; however, the majority of the study will focus on the lead underwriter in the syndicate, as this is the lead underwriter and does most of the work. Even though the pricing aspect of the MLU-effects is somewhat irrelevant in the SPAC case, we wish to examine whether there is a post-deal close performance effect related to the syndicate structure.

3.3 Time used from IPO to deal closed

The last variable of interest concerns the time used from when the SPAC has its IPO to when the target company has been determined and the deal closes. The life of a SPAC is limited and will result in liquidation if no target company is secured. The time required to locate this target and undergo due diligence is thought to be highly related to the quality of the SPAC sponsors. Previous studies show that it takes on average 19.2 months to complete a business combination for SPACs with sponsors obtaining a high network centrality, whereas an average of 21.7 months for those with low network centrality. Hence, the empirics state that underwriters with a high network centrality reduce the time required for the underwriters to identify a merger candidate. However, this does not indicate if this will result in a higher return for the investor (Lin, Lu, Michaely, & Qin, 2021). Considering that a higher-quality underwriter is associated with a shorter term from IPO to deal closed, there is reason to believe that a shorter time used from IPO to deal closed will result in higher performance. We will test this hypothesis by examining whether a shorter period of time from IPO to deal close will imply higher returns.

A further analysis on this matter is examining whether it is the underwriter experience that drives the time used to close the deal. That is, does a more experienced underwriter close SPAC deals faster – and by that, will again higher experience be the main driver of the implied higher returns? We examine this by adding a test for time from IPO to deal close on underwriter experience and reputation.

4 Methodology

4.1 Research Gaps

There exists significant research on the topics of both IPOs and SPACs. During our work with this thesis, however, we have found that there are also significant gaps – which this thesis will attempt to fill.

As mentioned, most existing research on IPOs are on the traditional IPO market, leaving an opening for us to study the SPAC IPO market. The existing research on the SPAC market revolves primarily around general characteristics like performance compared to the IPO market, acquisition likelihood and, survival after close. Thus, our thesis attempts to add to the literature on SPACs by focusing on the role of the underwriter.

4.2 Research Question and Hypotheses

Hypothesis 1

In our first series of tests, we examine whether the underwriter's reputation affects the SPAC's short and long-term performance after the close of the deal. Prior research finds that underwriter reputation has a positively correlation with IPO performance, thus we will directly test whether the same applies to SPAC IPOs. To measure reputation, we use the Megginson-Weiss measure, which has become a market standard in measuring underwriter reputation in the IPO market.

A more respectable/reputable lead underwriter results in higher returns for the investor both in the long- and short-term.

Hypothesis 2

Hypothesis 2 is, as above, related to the values of the underwriter's deal count. However, we now examine the absolute values, not seeing them in relation to the market total, hence check for robustness from the MW measure. Further, we implement controls for industry and lead underwriter fixed effects. Accordingly, we wish to examine whether the absolute experience of the underwriter, being their completed deal

count, affects the performance of their SPACs. We expect this relationship to be positive.

There is a positive correlation between an investment banks' higher deal count and returns for the investor.

Hypothesis 3

Similarly, as above, we examine the underwriter's total deal volume in dollar terms, and whether an increase implies higher returns. We do this as some underwriters perform few but high-value deals, whereas others perform many low-value deals. First and foremost, a higher deal volume in terms of dollars allows a broader consideration of possible target companies. In addition, larger value deals may enable cost benefits from a lower percentage of fixed costs relative to the SPAC size. We expect a positive correlation between higher SPAC IPO volume and returns for the investor.

There is a positive correlation between higher SPAC IPO total deal volume and returns for the investor.

Hypothesis 4

Our following hypothesis regards the syndicate of underwriters – as there often is more than one. Our hypotheses this far have been based on the lead underwriter, whereas now we wish to examine whether there is a difference in performance when there is more than one underwriter. Earlier findings have supported the certification hypothesis, suggesting that offerings managed by more than one lead underwriter are priced closer to their intrinsic value, have less volatile initial returns, and have better long-term performance. Hence, we expect the effect on returns by an increasing number of underwriters to be positive.

There is a positive correlation between joint bookrunners in a SPAC IPO and returns for the investor.

Hypothesis 5

An expectation in the SPAC market is that the time used between IPO to deal close represents a notion of sponsor quality. Research has found that high-quality sponsors use less time and are better at determining a suitable target company and closing the

deal. In addition, since there is a time limit on the SPACs, the closer the sponsors get to the deadline, the more inclined they will be to finalize a deal – even if it is a bad one. Hence, one would expect a longer IPO to deal close period to imply lower returns. Further, it is natural to assume that high-quality sponsors would be inclined to hire high-quality underwriters for their deals, as they are thought to have broader insight, network, and experience with the SPAC process. Hence, we expect a negative relationship in increased time used from SPAC IPO to deal close and the returns for the SPACs, and hypothesis 5.1 is as follows.

There is a negative correlation between the time used from SPAC IPO to deal close and returns for the investor.

Deepening this analysis further, hypothesis 5.2 interprets time now as a dependent variable, testing whether it is the underwriter experience that drives the time used to close the deal. That is, does a more experienced underwriter close SPAC deals faster, and if they do, is this the real reason for the implied higher returns? We expect a negative relationship, as we assume that when an underwriter has more experience, they will use less time on closing SPAC deals.

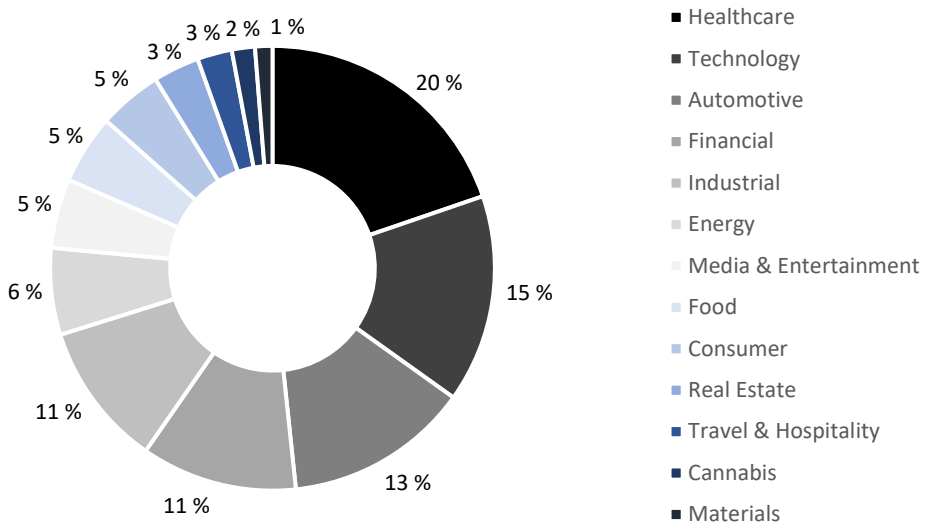
There is a negative correlation between underwriter experience and the time used between SPAC IPO to deal close.

4.3 Data

We test our hypotheses regarding underwriter reputation and SPAC performance using a sample of 232 closed SPAC deals from the United States and Canada. The data is retrieved from SPAC Research and has its first observation in 2015 and last in 2022. We perform the calculations using Stata SE 17.

The data consists of SPACs across several industries, with healthcare being the sector with most the SPAC deals, closely followed by technology.

Figure 2: This figure reports the split between different industries in the data sample



The average SPAC IPO size has increased with an average IPO deal size of $2,094 million in 2021. The development in 2022 is well underway, as this data is gathered in March. Hence, it seems as if the SPAC market will continue to expand in the time to come.

Figure 3: This figure reports the average deal volume in the data sample

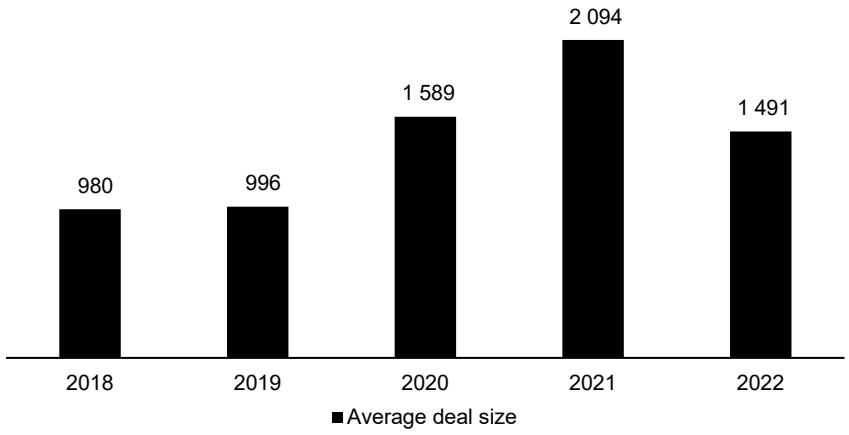


Table 1 outlines the top 10 underwriters based on total deal volume through 2015. Citigroup is the top underwriter with a total deal volume of $84,849 million with a total of 28 completed deals.

Table 1: This table presents the underwriter league table for all years in the data sample sorted on total deal volume

	Underwriter	TEV	Deal count
1	Citigroup	84,849	28
2	Deutsche Bank	70,047	31
3	Credit Suisse	57,919	23
4	Goldman Sachs	35,349	12
5	Cantor Fitzgerald	31,130	30
6	Morgan Stanley	24,138	7
7	Jefferies	15,641	15
8	EarlyBirdCapital	13,105	15
9	JP Morgan	12,527	6
10	UBS	10,742	6

An aspect to notice, is that deal count and volume do not necessarily increase proportionally together. For instance, Morgan Stanley has completed only seven deals, but nevertheless for a higher total deal volume than Jefferies, who has completed 15 deals. Thus, we will perform the analyses in terms of both deal count and deal volume.

4.4 Cumulative Adjusted Returns

The dependent variable of interest throughout the study is the cumulative adjusted returns (CAR) of the SPAC after the merger has been completed and the deal closed. All regressions done in the study, seek to examine whether an independent variable affects the CAR. To calculate the CAR's, the prices of the SPACs were gathered together with the rest of the data from SPAC Research. We then calculated the log excess returns using the Russell 2000 index as a benchmark for periods of 2, 30 and, 90 days.

4.5 Additional Control Variables

To enhance the internal validity of our study, one can add different control variables to the regressions. Control variables are any variable held constant or limited in a research study and are typically not in the interest of the study's aims. These limit the influence of confounding and other extraneous variables (Bhandari, 2022). Generally, extraneous variables are variables not investigated but can potentially affect the study's outcome, leading to inaccurate conclusions about the relationships between independent and dependent variables (Bhandari, 2022). Confounding variables are unmeasured third variables that influence both the supposed cause and the supposed effect. If one does

not implement control variables like these, one might find significant relationships that does not really actually exist – as the confounding variables drive the observed relationship (Thomas, 2022).

In order to address this issue, we incorporate the following control variables into the study.

4.5.1 Lead Underwriter Fixed Effects

The first variable of control implemented in the research is the lead underwriter fixed effects. This determines whether the current reputation of the lead underwriter is affecting the results or whether their previous experience with SPACs is more important.

Fixed effects are variables that are constant across the selection, hence the lead underwriter fixed effects collect all issues where the lead underwriter is, i.e., Cantor Fitzgerald. This absorbs the effect of reputation and highlights the power of prior experience.

4.5.2 Industry Fixed Effects

The second control variable we include are industry fixed effects. In this case, the fixed effects group all SPACs based on the deals' respective industries varying from consumer, technology, industrial, etc. These fixed effects capture the return of all SPACs within the same industry and control for systematic differences or disparities in performance across sector categories.

4.6 Limitations of Our Study

4.6.1 IPO and SPAC Comparisons

As there are research gaps on several topics we discuss in this thesis, we have been inclined to make certain assumptions. We discuss some of the explicit assumptions we are making below.

4.6.2 Syndicate Structure

A possible limitation of our study is that we direct our focus at the lead underwriter. Some studies find that MLUs provide certification to the issue and indicates that IPOs led by MLUs experience lower initial return, lower variability of initial returns, and better long-run performance. We will nevertheless focus on the lead underwriter in the syndicate for most of our study, as it is the lead underwriter who does most of the work. Our fourth hypothesis, however, examines if there is an observable effect on returns from the structure of the underwriting syndicate.

4.6.3 Megginson-Weiss Underwriter Reputation Measure

There is no official reputation ranking designed for the underwriters of a SPAC. As mentioned earlier in the paper, we will be using the measure designed by Megginson & Weiss to measure IPO underwriter reputation as a proxy for SPAC IPO underwriter reputation. However, the MW measure is designed for regular IPOs, which differs slightly from SPAC IPOs. The companies going public with an IPO are not necessarily similar to the ones that choose to go public through a SPAC. Another implication is the transient nature of the SPACs, as opposed to IPOs. IPOs and SPACs are not identical processes, and a measure designed for IPO underwriters may not be suitable for that of SPACs. Nevertheless, we will still use the MW measure as the measure for underwriter reputation since it likely captures the same aspects of reputation in both markets.

5 Analysis

5.1 H1: Megginson-Weiss Underwriter Reputation

We begin our analysis using the MW measure as a reputational measure of the underwriters. Using this measure, we calculate the underwriters' market share based on both deal count and the total dollar value of deal volume on a quarterly basis. For both deal count and deal volume, we calculate measures both relatively and rank-based – whereas the latter assigns the underwriter with the largest total deal volume or deal count with the highest rank and vice versa.

5.1.1 Deal Count

Relative Market Share

The relative market share measure is the individual underwriters' total quarterly deal count divided by the deal count for the whole market. Each underwriter will then have a relative measure according to their contributions to the SPAC market. The goal is to reveal whether a higher market share implies greater investor returns in the short and long run.

Table 2: This table presents the 2-, 30- and 90-day CAR regression on prior deal count with MW-measure

VARIABLES	2-day return	30-day return	90-day return
Prior Deals	**0.1531****	0.2331	**0.4046****
	(0.0642)	(0.1518)	(0.1793)
Constant	-0.0148	-0.1500***	-0.3501***
	(0.0168)	(0.0396)	(0.0468)
Observations	228	228	228
R-squared	0.0246	0.0103	0.0220
Standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

From the results in table 2, we see that an increase in market share by the MW measure implies statistically significantly higher performance for 2- and 90-day returns with a significance level of 5% (ρ = 0.018 and 0.025 respectively). The 2-day returns will increase by 15.31 percentage points and the 90-day returns increase by as much as 40.46 percentage points from an increase in market share based on the prior deal count.

A higher deal-count based market share results in higher short-term and long-term returns. However, there is no significant effect on the mid-term, 30-day returns. This indicates that having a higher market share based on prior deals is associated with better deals as evaluated by the market in both the short- and long-term.

Ranked Market Share

Further, we normalize the MW measure by giving the underwriters ranks, hereby the underwriter with the highest total deal sum obtains the highest rank (i.e., 1) and vice versa. This contributes to normalizing the measures by removing outliers. Note that the high ranks are given to the underwriters with lower deal counts – hence we expect an increase in rank to lead to a decrease in returns.

Table 3: This table presents the 2-, 30- and 90-day CAR regression on prior deal count with ranked MW-measure

VARIABLES	2-day return	30-day return	90-day return
Prior Deals Rank	0.0018	-0.0031	**-0.0076****
	(0.0011)	(0.0026)	(0.0031)
Constant	-0.0100	-0.0711	-0.1858***
	(0.0188)	(0.0442)	(0.0519)
Observations	228	228	228
R-squared	0.0107	0.0061	0.0259
Standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

We found that an increase in MW rank leads to a slight decrease in the 90-day returns, amounting to negative 0.76 percentage points on a 5% significance level ($\rho = 0.015$). See table 3. Hence, an underwriter with a higher ranking will obtain a lower long-term return evaluated by the market. However, we find that the ranked MW measure had no significant correlation with the short- and middle-term returns. These tests may differ as the variables are now normalized and proportional.

5.1.2 Total Deal Volume

The deal volume differs from the deal count as we now examine the absolute monetary values of all the SPAC deals the underwriters have completed in relation to the market total. In the same fashion as the deal count, we measure both in relative and ranked terms.

Relative Market Share

The underwriters' relative market share is equal to the total quarterly deal volumes – that is, the monetary value of the deals they have completed.

Table 4: This table presents the 2-, 30- and 90-day CAR regression on prior deal volume with MW-measure

VARIABLES	2-day return	30-day return	90-day return
Deal Size	0.0645	0.2132	**0.5550*** **
	(0.0635)	(0.1491)	(0.1743)
Constant	0.0014	-0.1421***	-0.3683***
	(0.0163)	(0.0384)	(0.0449)
Observations	232	232	232
R-squared	0.0045	0.0088	0.0422
Standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

From the results obtained in table 4 we can interpret that with an increase in deal volume, there is an increase in the long-term returns only, with as much as 55.50 percentage points on a 1% significance level (ρ = 0.002). No significant results are reported from the 2- and 30-day returns, however both coefficients are positive and in the same direction as the longer-run returns.

Ranked Market Share

Again, the ranked measure of market share based on the underwriters' deal volumes. In our sample, there were deals spanning from 50m to 20bn, hence the variation is large. The ranking contributes to even out the observations. See table 5.

Table 5: This table presents the 2-, 30- and 90-day CAR regression on prior deal volume with ranked MW-measure

VARIABLES	2-day return	30-day return	90-day return
Deal Size Rank	0.0014	-0.0022	**-0.0059***
	(0.0011)	(0.0027)	(0.0031)
Constant	-0.0053	-0.0796*	-0.2029***
	(0.0187)	(0.0441)	(0.0521)
Observations	232	232	232
R-squared	0.0067	0.0029	0.0151
Standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

An increase in ranking based on prior deal volume will result in a negative 0.59 percentage point decrease in the 90-day CAR, which is significant at a 10% level (ρ = 0.062). This is consistent with the results for deal count, as a higher ranked underwriter have a lower market share of deal volume, and we expect an underwriter with a higher ranking to obtain lower long-term return evaluated by the market. The ranked MW measure had no significant correlation with the short- and middle-term returns.

5.1.3 Conclusion

To conclude the hypothesis regarding the MW measure, we found significant effects of both increases in market share in deal counts and total deal volume. The effects were robust to using both the absolute market share as well as the rank-based market share, especially for longer-term returns. In addition, the findings were supported when using the ranked market share, as a higher rank, implying a lower MW measure, implied an adverse effect of -0.76 percentage points on 90-day returns.

We see the same pattern for the analysis when using total deal volume. An increase in the MW measure based on the market share of total deal volume implies a 0.55 percentage point increase for the relative measure. Following the effect of a higher-ranked MW measure, again, a higher rank means lower market share, implying a negative effect of 0.59 percentage points on 90-day returns.

Hence, a higher market share, both in relative and ranked terms, implies an increase in post-close performance of SPACs in the short and long run, both when measured in deal count and deal volume. This indicates that having more experience is associated

with better deals as evaluated by the market in the short- and long-term. There is no significant effect on the 30-day returns.

It is, however, worth noting that the R^2 is relatively low for all periods, implying that the independent variable does not have high explanatory power of the variation in the dependent variable.

5.2 H2: Prior Deal Count

Further, we examined the absolute deal count without seeing it in relation to the market total, only the absolute values. We regressed how many prior deals the lead underwriter had completed to the returns of the SPACs after the deals were closed. This was done to examine whether the absolute experience of the underwriter had a significant impact on the returns of the SPAC in the short and long run, and to check for consistency with hypothesis 1.

5.2.1 Univariate Regression

The univariate regression is only significant for the 2-day return at a 5% significance level (ρ = 0.015). See table 6. This implies that for every additional deal completed, there is a 0.39 percentage point increase in the 2-day CAR, indicating that having more experience in the form of deal count is associated with better deals as evaluated by the market in the short term. Moreover, the results for the regressions done on the 30- and 90-day returns imply that having more experience is not associated with better returns for the longer-term periods, as these results are not statistically significant. This could imply that investors have much faith in experienced underwriters, causing a higher short-term return, however that the effect disappears over time.

Table 6: This table presents the 2-, 30- and 90-day CAR regression on prior deal count

VARIABLES	2-day return	30-day return	90-day return
Prior Deals	**0.0039****	-0.0019	-0.0034
	(0.0016)	(0.0038)	(0.0045)
Constant	-0.0197	-0.0907**	-0.2482***
	(0.0178)	(0.0424)	(0.0504)
Observations	232	232	232
R-squared	0.0261	0.0012	0.0025
Standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

5.2.2 Industry fixed effects

As an additional control, we include industry fixed effects to control for any systematic differences across sector types. We report the results in table 7. We continue to find a positive statistically significant relationship on the 2-day CAR at the 5% level (ρ = 0.027) with a coefficient of 0.0036. This result indicates a positive correlation between prior deal count and the short-term returns. These results are rather consistent with the univariate regression, where we find a statistically significant effect on 2-day returns amounting to 0.39 percentage points. This implies that our results are robust to including industry fixed effects, and that the particular industry of the SPAC is not driving our results.

Table 7: This table presents the 2-, 30- and 90-day CAR regression on prior deal count controlling for industry fixed effects

VARIABLES	2-day return	30-day return	90-day return
Prior Deals	0.0036**	-0.0021	-0.0025
	(0.0016)	(0.0039)	(0.0046)
Cannabis	0.1543	0.1130	0.1267
	(0.1131)	(0.2725)	(0.3242)
Consumer	0.0257	0.1006	0.0492
	(0.0657)	(0.1582)	(0.1883)
Energy	0.0131	-0.0183	0.1259
	(0.0589)	(0.1418)	(0.1687)
Financial	-0.0142	-0.0394	-0.0027
	(0.0495)	(0.1192)	(0.1419)
Food	0.0855	0.0334	0.2428
	(0.0634)	(0.1527)	(0.1818)
Healthcare	-0.0184	-0.0848	-0.0566
	(0.0433)	(0.1044)	(0.1242)
Industrial	0.0395	0.0350	0.0837
	(0.0500)	(0.1205)	(0.1434)
Materials	-0.0489	-0.0357	-0.2475
	(0.1136)	(0.2735)	(0.3255)
Media & Entertainment	-0.0985	-0.0993	-0.0520
	(0.0656)	(0.1581)	(0.1881)
Real Estate	-0.0267	0.2814	0.2728
	(0.0741)	(0.1785)	(0.2123)
Technology	-0.0560	-0.0232	0.1247
	(0.0459)	(0.1105)	(0.1315)
Travel & Hostpitality	-0.0256	-0.2646	0.0451
	(0.0834)	(0.2008)	(0.2389)
Constant (Automotive)	-0.0097	-0.0733	-0.3016***
	(0.0359)	(0.0865)	(0.1030)
Observations	232	232	232
R-squared	0.0798	0.0377	0.0362
Standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

5.2.3 Lead Underwriter Fixed Effect

To elaborate the analysis further, we implement a lead underwriter fixed effect regression to examine whether the lead underwriter's existing reputation matters or whether their experience with SPACs matters. This lead underwriter fixed effect adds a dummy for each lead, which is incorporated into the regression. By doing this, we remove the average effect of the underwriter overall first, and thus any remaining increase related to prior deals could be interpreted as learning.

The first thing to notice from the results in table 8 is that controlling for lead fixed effects changes the outcome of the analysis. Now, the 90-day CAR is statistically significant at a 5% level (ρ = 0.019). This indicates that the underwriters' prior deal count negatively affects the long-term return, with a decrease of 1.37 percentage points

for every additional deal the underwriter completes. To continue, the results are now insignificant for the 2-day and 30-day CAR.

From the coefficients, we can observe an interesting effect related to the heterogeneity of the leads. Some have positive values, whereas others have negative. This could indicate a notion of quality of the underwriters that is not related to their deal experience. We can interpret this as a lack of learning. After controlling for the non-time varying reputation, there is no longer a significant effect of learning. Hence, this indicates that it is primarily the lead underwriter's reputation and not deal experience that is driving our earlier results.

Table 8: This table presents the 2-, 30- and 90-day CAR regression on prior deal count controlling for lead underwriter fixed effects

VARIABLES	2-day return	30-day return	90-day return
Prior Deals	0.0021	-0.0071	**-0.0137****
	(0.0020)	(0.0050)	(0.0057)
2. BTIG	-0.0621	-0.0141	-0.0974
	(0.1167)	(0.2836)	(0.3288)
3. Barclays	-0.0966	-0.3877	**-0.5594***
	(0.1044)	(0.2536)	(0.2940)
4. BofA Securities	0.1794	0.3823	0.0656
	(0.1477)	(0.3588)	(0.4160)
5. Canaccord Genuity	0.1736	0.3670	0.4016
	(0.1954)	(0.4746)	(0.5503)
6. Cantor Fitzgerald	0.0760	0.1796	-0.0279
	(0.0844)	(0.2050)	(0.2377)
7. Chardan	0.0726	0.0512	-0.0957
	(0.0919)	(0.2233)	(0.2589)
8. Citigroup	0.0727	0.1447	0.0998
	(0.0844)	(0.2050)	(0.2377)
9. Cowen	0.1262	0.2481	0.1136
	(0.0977)	(0.2373)	(0.2751)
10. Credit Suisse	0.0565	0.1186	0.0603
	(0.0851)	(0.2067)	(0.2397)
11. Deutsche Bank	0.0735	**0.3467***	0.2345
	(0.0846)	(0.2055)	(0.2382)
12. EarlyBird Capital	0.0123	-0.0292	-0.2040
	(0.0878)	(0.2133)	(0.2474)
13. FBR Capital Markets	0.0740	-0.0985	-0.3464
	(0.1954)	(0.4746)	(0.5503)
14. Goldman Sachs	0.0050	0.2070	0.1359
	(0.0906)	(0.2201)	(0.2552)
15. I-Bankers Securities	-0.0590	-0.1705	-0.8239
	(0.1954)	(0.4746)	(0.5503)
16. JP Morgan	-0.0079	0.1506	-0.0068
	(0.1044)	(0.2536)	(0.2940)
17. Jefferies	0.0181	0.2481	-0.1480
	(0.0878)	(0.2133)	(0.2474)
18. Jones Trading	**0.3320***	0.5051	0.3686
	(0.1954)	(0.4746)	(0.5503)
19. Ladenburg Thalman	**-0.4816*****	-0.2691	-0.5793
	(0.1477)	(0.3588)	(0.4160)
20. LifeSci Capital	0.0629	-0.4979	**-0.7576***
	(0.1477)	(0.3588)	(0.4160)
21. Maxim	-0.1830	0.2016	**-1.0106*****
	(0.1167)	(0.2836)	(0.3288)
22. Morgan Stanley	0.0367	0.0615	-0.3233
	(0.1044)	(0.2536)	(0.2940)
23. Nomura	0.0707	0.1139	-0.2216
	(0.1477)	(0.3588)	(0.4160)
24. Oppenheimer	0.0461	-0.0349	0.0966
	(0.1167)	(0.2836)	(0.3288)
25. Piper Sandler & Co	0.0434	-0.1180	-0.5917
	(0.1954)	(0.4746)	(0.5503)
26. Raymond James	0.0646	0.2961	-0.2547
	(0.1954)	(0.4746)	(0.5503)
27. Roth Capital Partners	0.1218	-0.2696	-0.5414
	(0.1477)	(0.3588)	(0.4160)
28. SVB Securities	0.0240	0.6038	0.2302
	(0.1954)	(0.4746)	(0.5503)
29. Stifel Nicolaus	0.1836	-0.0339	-0.3464
	(0.1954)	(0.4746)	(0.5503)
30. ThinkEquity	**0.4724****	0.6517	0.2777
	(0.1954)	(0.4746)	(0.5503)
31. UBS	0.1716	**0.4540***	0.2531
	(0.1044)	(0.2536)	(0.2940)
32. Wells Fargo	-0.0904	**0.7232****	0.3764
	(0.1477)	(0.3588)	(0.4160)
Constant (B. Riley FBR)	-0.0517	-0.2008	-0.1405
	(0.0740)	(0.1797)	(0.2084)
Observations	232	232	232
R-squared	0.2175	0.1676	0.2084

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

5.2.4 Conclusion

To summarize, the univariate regression indicates a positive, statistically significant relationship with a higher prior deal count and the 2-day CAR with 0.39 percentage points, an effect of which disappears over time. This result is consistent after controlling for industry-fixed effects and concludes that the industry of the SPAC is not driving the observed effect of underwriters' prior deal count on returns. Overall, the coefficients indicate a positive relationship between a higher deal count in the short-term return and a not significant negative relationship in the long-term. This could imply an overly first-hand enthusiasm for underwriters with more experience in the form of deal count, which will reverse over the long term.

However, when we implemented the control for lead fixed effects, we obtained a statistically significant negative correlation with the long-term CAR. This alteration is a result of removing the lead fixed effects, which can be interpreted either as a lack of learning, or that after controlling for the non-time varying reputation, there is not a significant effect of learning. This implies that it is primarily the lead underwriter's reputation and not experience with the deals that is driving our earlier results.

Hence, the results partly contradict our hypothesis 2, as it shows a significantly negative correlation between an investment banks' higher deal count and returns for the investor in the long term. The coefficients for the short-term returns are positive, however not significant.

5.3 H3: Prior Deal Volume

In addition to the deal count, we use the absolute monetary deal volume as a variable to examine whether the experience of the underwriter measured in deal value has a significant impact on the returns of the SPAC. These two variables are connected, as an increase in an underwriter's deal count will implicitly also increase its total completed deal volume. However, as we saw earlier, some underwriters may have completed many small deals, and some may have few big, or even many big and few small – which makes it interesting to examine whether there is any difference in the results for the different variables.

5.3.1 Univariate Regression

We report the results of the univariate regression in table 9. The regression is statistically significant only for the 2-day CAR at a 5% level (ρ = 0.013). This implies that for every additional million in total deal volume there is a 0.09 percentage point increase in the 2-day CAR. This indicates that having more experience based on deal volume is associated with slightly better deals, as evaluated by the market in the short term. This is, however, not the case for the 30- and 90-day CAR. As the results were not statistically significant, it is implied that the variable of total underwriter deal volume has no significant effect on the long-term return, and that the initial effect wears off with time.

Table 9: This table presents the 2-, 30- and 90-day CAR regression on prior deal volume

VARIABLES	2-day return	30-day return	90-day return
Deal Size	**0.0009****	-0.0004	-0.0004
	(0.0004)	(0.0009)	(0.0010)
Constant	-0.0178	-0.0941**	-0.2627***
	(0.0171)	(0.0409)	(0.0486)
Observations	232	232	232
R-squared	0.0266	0.0008	0.0007
Standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

These results are consistent with the findings above when examining the deal count. Both deal volume and deal count have a statistically significant positive relationship to the short-term return.

A possible explanation for this could be that market participants do not necessarily check or notice how big the SPAC deals are or other deal details when hearing about new SPAC listings. Instead, they catch the information about the listing company and the underwriters. Then, when the investors themselves consider investing in a SPAC, the underwriters' names are familiar and hence credible – increasing the short-term expectations and returns.

As mentioned, there is a tremendous span in regard to deal volume. To smooth out the variations, we implemented the logarithm of the cumulative deal volume, as the logarithm considers outliers and scaling. Logarithms shrink large values a lot, and

smaller values a little. Hence, the data is easier to examine, and the variation is often normalized across observations.

Table 10: This table presents the 2-, 30- and 90-day CAR regression on prior logarithmic deal volume

VARIABLES	2-day return	30-day return	90-day return
Logarithm of Deal Size	0.0110	-0.0098	-0.0116
	(0.0083)	(0.0196)	(0.0233)
Constant	-0.0185	-0.0795	-0.2437***
	(0.0261)	(0.0616)	(0.0733)
Observations	232	232	232
R-squared	0.0077	0.0011	0.0011
Standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

The results of the regression on the logarithmic returns in table 10 are however all insignificant, implying that once smoothed out – the total deal volume of an underwriter's SPAC deals have no effect on returns for any time periods.

5.3.2 Industry fixed effects

Again, we control for industry fixed effects, of which the results are displayed in table 11. As the analysis on the logarithmic cumulative deal volume above smoothed out the initial findings, it is implied that the log deal volume is a better measure for the matter, hence we will use these in the regression. The findings imply now that there is still not a statistically significant effect on short-term return on total deal volume after controlling for industry fixed effects. Hence, we can conclude that there are no industry fixed effects biasing these results.

Table 11: This table presents the 2-, 30- and 90-day CAR regression on prior logarithmic deal volume controlling for industry fixed effects

VARIABLES	2-day return	30-day return	90-day return
Deal Volume	0.0107	-0.0080	-0.0055
	(0.0084)	(0.0201)	(0.0239)
Cannabis	0.1482	0.1181	0.1291
	(0.1143)	(0.2731)	(0.3251)
Consumer	0.0346	0.0960	0.0425
	(0.0660)	(0.1579)	(0.1879)
Energy	0.0076	-0.0162	0.1308
	(0.0593)	(0.1417)	(0.1687)
Financial	-0.0131	-0.0395	-0.0040
	(0.0499)	(0.1193)	(0.1420)
Food	0.0865	0.0324	0.2426
	(0.0639)	(0.1529)	(0.1819)
Healthcare	-0.0201	-0.0840	-0.0552
	(0.0437)	(0.1044)	(0.1243)
Industrial	0.0375	0.0358	0.0854
	(0.0504)	(0.1205)	(0.1435)
Materials	-0.0386	-0.0396	-0.2568
	(0.1144)	(0.2736)	(0.3256)
Media & Entertainment	-0.1088	-0.0933	-0.0448
	(0.0660)	(0.1578)	(0.1878)
Real Estate	-0.0285	0.2819	0.2748
	(0.0747)	(0.1785)	(0.2125)
Technology	-0.0601	-0.0211	0.1277
	(0.0462)	(0.1104)	(0.1314)
Travel & Hostpitality	-0.0258	-0.2637	0.0445
	(0.0841)	(0.2010)	(0.2392)
Constant (Automotive)	-0.0084	-0.0691	-0.3077***
	(0.0409)	(0.0977)	(0.1163)
Observations	232	232	232
R-squared	0.0654	0.0371	0.0352
Standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

5.3.3 Lead Underwriter Fixed Effects

As mentioned before, the lead underwriter's fixed effects examine whether the lead underwriter's existing reputation matters or whether their experience with SPACs matters. Likewise, as for the analysis on deal count, the results change from the univariate regression once the lead underwriter fixed effects have been accounted for. The results for this analysis are displayed in table 12 and show a statistically significant negative effect of deal volume on the long-term CAR. Hence, it is clear that the positive effect we observe in the univariate regression is also partly due to the lead underwriter's

fixed effects. To conclude, the results imply that every increase in total deal volume decreases the 90-day CAR amounting to 0.25 percentage points. This indicates that having more experience based on deal volume is associated with worse deals as evaluated by the market in the long term.

Table 12: This table presents the 2-, 30- and 90-day CAR regression on prior deal volume controlling for lead underwriter fixed effects

VARIABLES	2-day return	30-day return	90-day return
Deal Size	0.0006	-0.0013	**-0.0025***
	(0.0005)	(0.0011)	(0.0013)
2. BTIG	-0.0649	-0.0056	-0.0812
	(0.1165)	(0.2840)	(0.3304)
3. Barclays	-0.0973	-0.3862	**-0.5564***
	(0.1042)	(0.2540)	(0.2956)
4. BofA Securities	0.1796	0.3870	0.0749
	(0.1474)	(0.3594)	(0.4181)
5. Canaccord Genuity	0.1737	0.3732	0.4138
	(0.1950)	(0.4754)	(0.5531)
6. Cantor Fitzgerald	0.0740	0.1559	-0.0749
	(0.0835)	(0.2034)	(0.2367)
7. Chardan	0.0763	0.0367	-0.1237
	(0.0916)	(0.2233)	(0.2598)
8. Citigroup	0.0653	0.1323	0.0746
	(0.0845)	(0.2059)	(0.2396)
9. Cowen	0.1285	0.2406	0.0991
	(0.0975)	(0.2376)	(0.2765)
10. Credit Suisse	0.0503	0.1126	0.0477
	(0.0852)	(0.2077)	(0.2417)
11. Deutsche Bank	0.0687	0.3249	0.1911
	(0.0839)	(0.2046)	(0.2380)
12. EarlyBird Capital	0.0090	-0.0336	-0.2130
	(0.0877)	(0.2139)	(0.2488)
13. FBR Capital Markets	0.0741	-0.0923	-0.3343
	(0.1950)	(0.4754)	(0.5531)
14. Goldman Sachs	-0.0004	0.2109	0.1430
	(0.0907)	(0.2211)	(0.2572)
15. I-Bankers Securities	-0.0589	-0.1643	-0.8118
	(0.1950)	(0.4754)	(0.5531)
16. JP Morgan	-0.0084	0.1517	-0.0046
	(0.1042)	(0.2540)	(0.2956)
17. Jefferies	0.0185	0.2358	-0.1721
	(0.0875)	(0.2132)	(0.2481)
18. Jones Trading	**0.3321***	0.5113	0.3808
	(0.1950)	(0.4754)	(0.5531)
19. Ladenburg Thalman	**-0.4810*****	-0.2651	-0.5714
	(0.1474)	(0.3594)	(0.4181)
20. LifeSci Capital	0.0640	-0.4952	**-0.7522***
	(0.1475)	(0.3594)	(0.4181)
21. Maxim	-0.1836	0.2055	**-1.0031*****
	(0.1165)	(0.2840)	(0.3305)
22. Morgan Stanley	0.0378	0.0590	-0.3281
	(0.1042)	(0.2541)	(0.2956)
23. Nomura	0.0701	0.1205	-0.2088
	(0.1474)	(0.3593)	(0.4180)
24. Oppenheimer	0.0457	-0.0315	0.1032
	(0.1165)	(0.2840)	(0.3305)
25. Piper Sandler & Co	0.0435	-0.1118	-0.5795
	(0.1950)	(0.4754)	(0.5531)
26. Raymond James	0.0647	0.3023	-0.2425
	(0.1950)	(0.4754)	(0.5531)
27. Roth Capital Partners	0.1230	-0.2669	-0.5361
	(0.1475)	(0.3594)	(0.4181)
28. SVB Securities	0.0241	0.6100	0.2424
	(0.1950)	(0.4754)	(0.5531)
29. Stifel Nicolaus	0.1837	-0.0277	-0.3342
	(0.1950)	(0.4754)	(0.5531)
30. ThinkEquity	**0.4725****	0.6579	0.2899
	(0.1950)	(0.4754)	(0.5531)
31. UBS	0.1720	**0.4532***	0.2515
	(0.1042)	(0.2540)	(0.2956)
32. Wells Fargo	-0.0896	**0.7266****	0.3831
	(0.1474)	(0.3594)	(0.4181)
Constant (B. Riley FBR)	-0.0518	-0.2070	-0.1527
	(0.0738)	(0.1799)	(0.2093)
Observations	232	232	232
R-squared	0.2200	0.1646	0.2002

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

One might be concerned about the estimation of the standard errors in our regressions. Therefore, for robustness, we cluster at the underwriter level. When clustering the underwriters, we control for within cluster correlation in the residuals. Otherwise, our standard errors might be incorrect. The results of the regression after clustering are portrayed in table 13. We find statistical significance for all time periods, hence there is an effect on prior total deal volume on returns for the investor. A significant element to note is that the coefficient is positive for the 2-day CAR (ρ = 0.005) and negative for both the 30- and 90-day CAR (ρ = 0.098 and 0.016 respectively). This implies that an increase in total deal volumes will result in short-term gains and long-term loss after controlling for cluster and lead fixed effects. This is consistent with what we have seen in the previous results.

Table 13: This table presents the 2-, 30- and 90-day CAR regression on prior deal volume controlling for clustered lead underwriter fixed effects

VARIABLES	2-day return	30-day return	90-day return
Deal Size	0.0006***	-0.0013*	-0.0025**
	(0.0002)	(0.0008)	(0.0010)
2. BTIG	-0.0649***	-0.0056***	-0.0812***
	(0.0002)	(0.0008)	(0.0010)
3. Barclays	-0.0973***	-0.3862***	-0.5564***
	(0.0002)	(0.0009)	(0.0012)
4. BofA Securities	0.1796***	0.3870***	0.0749***
	(0.0014)	(0.0055)	(0.0071)
5. Canaccord Genuity	0.1737***	0.3732***	0.4138***
	(0.0018)	(0.0068)	(0.0087)
6. Cantor Fitzgerald	0.0740***	0.1559***	-0.0749*
	(0.0083)	(0.0318)	(0.0409)
7. Chardan	0.0763***	0.0367***	-0.1237***
	(0.0005)	(0.0019)	(0.0025)
8. Citigroup	0.0653***	0.1323***	0.0746
	(0.0100)	(0.0385)	(0.0494)
9. Cowen	0.1285***	0.2406***	0.0991***
	(0.0001)	(0.0002)	(0.0003)
10. Credit Suisse	0.0503***	0.1126***	0.0477
	(0.0072)	(0.0277)	(0.0355)
11. Deutsche Bank	0.0687***	0.3249***	0.1911***
	(0.0102)	(0.0392)	(0.0504)
12. EarlyBird Capital	0.0090**	-0.0336**	-0.2130***
	(0.0042)	(0.0162)	(0.0208)
13. FBR Capital Markets	0.0741***	-0.0923***	-0.3343***
	(0.0018)	(0.0068)	(0.0087)
14. Goldman Sachs	-0.0004	0.2109***	0.1430***
	(0.0039)	(0.0148)	(0.0190)
15. I-Bankers Securities	-0.0589***	-0.1643***	-0.8118***
	(0.0018)	(0.0068)	(0.0087)
16. JP Morgan	-0.0084***	0.1517***	-0.0046***
	(0.0002)	(0.0007)	(0.0009)
17. Jefferies	0.0185***	0.2358***	-0.1721***
	(0.0030)	(0.0115)	(0.0148)
18. Jones Trading	0.3321***	0.5113***	0.3808***
	(0.0018)	(0.0068)	(0.0087)
19. Ladenburg Thalman	-0.4810***	-0.2651***	-0.5714***
	(0.0016)	(0.0060)	(0.0077)
20. LifeSci Capital	0.0640***	-0.4952***	-0.7522***
	(0.0018)	(0.0068)	(0.0087)
21. Maxim	-0.1836***	0.2055***	-1.0031***
	(0.0005)	(0.0019)	(0.0024)
22. Morgan Stanley	0.0378***	0.0590***	-0.3281***
	(0.0004)	(0.0015)	(0.0019)
23. Nomura	0.0701***	0.1205***	-0.2088***
	(0.0012)	(0.0045)	(0.0058)
24. Oppenheimer	0.0457***	-0.0315***	0.1032***
	(0.0006)	(0.0022)	(0.0028)
25. Piper Sandler & Co	0.0435***	-0.1118***	-0.5795***
	(0.0018)	(0.0068)	(0.0087)
26. Raymond James	0.0647***	0.3023***	-0.2425***
	(0.0018)	(0.0068)	(0.0087)
27. Roth Capital Partners	0.1230***	-0.2669***	-0.5361***
	(0.0018)	(0.0068)	(0.0087)
28. SVB Securities	0.0241***	0.6100***	0.2424***
	(0.0018)	(0.0068)	(0.0087)
29. Stifel Nicolaus	0.1837***	-0.0277***	-0.3342***
	(0.0018)	(0.0068)	(0.0087)
30. ThinkEquity	0.4725***	0.6579***	0.2899***
	(0.0018)	(0.0068)	(0.0087)
31. UBS	0.1720***	0.4532***	0.2515***
	(0.0001)	(0.0005)	(0.0006)
32. Wells Fargo	-0.0896***	0.7266***	0.3831***
	(0.0017)	(0.0064)	(0.0082)
Constant (B. Riley FBR)	-0.0518***	-0.2070***	-0.1527***
	(0.0018)	(0.0068)	(0.0087)
Observations	232	232	232
R-squared	0.2200	0.1646	0.2002

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

5.3.4 Conclusion

After regressing and implementing the different controls on the analyses of the effect on returns from an underwriter's total prior deal volume, the findings all point in the same direction as the analysis on deal count. The univariate regression indicated a statistically significant positive relationship between deal volume and returns in the short term, followed by negative returns in the long run – of which both 30- and 90-day effects were not statistically significant. Hence, the initial positive effect disappears over time. These results were consistent after controlling for industry-fixed effects.

After the lead fixed effects control, the statistical significance shifted from the positive 2-day effect to the negative 90-day effect. Again, it is clear that this alteration is a result of the removal of the lead fixed effects, which implies that the results obtained without the control are biased.

Hence, the controlled findings do not support our hypothesis 3, as we observe a statistically significant negative effect on long-term returns from an increase in underwriter experience measured in total deal value.

5.4 H4: Underwriter Syndicate Composition

We have stated that we will focus on the lead underwriter during our thesis, as it is the lead that does most of the work. Nevertheless, we also examine whether there is an effect stemming from having a syndicate of several underwriters. If not, one could say that our assumption of focusing on the lead underwriter is valid. Although interesting in its own right, this primarily serves as a robustness check for our earlier results.

5.4.1 One vs Several Underwriters

The goal is to determine whether there is an effect of having a single underwriter or a syndicate of underwriters. We regress the CAR on a dummy variable where 0 = one single bookrunner and 1 = several bookrunners.

Table 14: This table presents the 2-, 30- and 90-day CAR regression on one vs. several underwriters

VARIABLES	2-day return	30-day return	90-day return
Bookrunner Dummy	-0.0221	-0.0021	0.0365
	(0.0286)	(0.0675)	(0.0802)
Constant	0.0286	-0.1050*	-0.3031***
	(0.0247)	(0.0583)	(0.0693)
Observations	232	232	232
R-squared	0.0026	0.0000	0.0009
Standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

See table 14. We do not find any significant effect of having multiple bookrunners across all time periods. Therefore, we conclude that there is no significant different between having a single vs multiple bookrunners for the SPAC. This lends some credence to our focus on the lead underwriter in our earlier analyses.

5.4.2 Exact Number of Underwriters

To examine this question further, we examine the specific number of underwriters in the syndicate to check for any potential effect of an increasing amount of bookrunners. That is, the variable reflects the exact number of underwriters involved in the deal, i.e.,1,2,3, etc. Considering that a wider range of bookrunners would reach a broader investor audience, one could expect that an increasing number of bookrunners in the syndicate could give higher returns.

Table 15: This table presents the 2-, 30- and 90-day CAR regression on bookrunner count

VARIABLES	2-day return	30-day return	90-day return
Bookrunner Count	0.0060	-0.0064	0.0196
	(0.0098)	(0.0231)	(0.0274)
Constant	-0.0019	-0.0917	-0.3214***
	(0.0259)	(0.0611)	(0.0726)
Observations	232	232	232
R-squared	0.0016	0.0003	0.0022
Standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

However, as shown in table 15, the effects were insignificant for all time periods, hence we find no significant effect for the number of bookrunners on returns. The assumption of focusing on the lead underwriter can therefore be deemed valid, as the structure of an underwriter syndicate of underwriters seems to have no significant effect on SPAC returns.

5.4.3 Conclusion

The results obtained above contrasts our hypothesis 4, which expects a higher number of bookrunners to result in higher returns for the investor. Hence, this finding supports our assumption throughout the study - that the lead underwriter is the most important factor in measuring the effect of underwriter characteristics on SPAC returns.

5.5 H5: Time between IPO to deal close

The last hypothesis regards the time period between the SPAC's initial public offering and the deal close. It is assumed that SPAC deals where the underwriter use a smaller period of time to determine and close a deal with a target company, produce better returns post close.

5.5.1 Univariate regression

The univariate regression on the time between deal IPO to deal close and returns for the investor is portrayed in table 16. The 2- and 30-day returns experience a negative effect of respectively negative 0.01 and 0.02 percentage points at a 5% and 10% significance level (ρ = 0.043 and 0.084 respectively). These findings imply that one additional working day used from the IPO to deal close, will result in a slight decrease in the returns for the investors. This supports the assumption of a negative relationship between time from IPO to deal close in the short- and mid-term returns for the investors. The effect on the 90-day return is not statistically significant, hence the time used from IPO to deal close may not affect long-term returns, however the direction of the effect appears to be in the same direction.

Table 16: This table presents the 2-, 30- and 90-day CAR regression on time between IPO and deal close

VARIABLES	2-day return	30-day return	90-day return
Time from IPO to deal close	-0.0001**	-0.0002*	-0.0002
	(0.0000)	(0.0001)	(0.0001)
Constant	0.0587**	-0.0128	-0.1802**
	(0.0260)	(0.0614)	(0.0732)
Observations	232	232	232
R-squared	0.0177	0.0129	0.0095
Standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

Due to the potential presence of outliers and the potential for a proportional effect, we also regress the CAR on the natural log of the time from IPO to deal close. We report the results of this regression in table 17. We find that using the log of the number of days has a significant negative effect for the 2-day return at the 10% level, but it is no longer significant at the 30-day and 90-day time periods, though still negative.

Table 17: This table presents the 2-, 30- and 90-day CAR regression on the logarithm of time between IPO and deal close

VARIABLES	2-day return	30-day return	90-day return
Logarithm of Time from IPO to deal close	-0.0482*	-0.0960	-0.1087
	(0.0248)	(0.0585)	(0.0696)
Constant	0.3029**	0.4718	0.3788
	(0.1502)	(0.3544)	(0.4215)
Observations	231	231	231
R-squared	0.0162	0.0116	0.0105
Standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

5.5.2 Industry Fixed Effects

Table 18 displays the results of the regression after controlling for industry fixed effects. Now, the results show statistical significance in all time periods with returns of -0.01, -0.02 and -0.02 respectively for the 2-, 30- and 90-day period. This regression shows the importance of controlling for industry fixed effects because there are likely differences in times to find deals across industries and the average returns. After controlling for industry fixed effects, we find an economically small, though significant effect at the 10% level across all three time-spans.

Table 18: This table presents the 2-, 30- and 90-day CAR regression on time between IPO and deal close controlling for industry fixed effects

VARIABLES	2-day return	30-day return	90-day return
Time from IPO to deal close	**-0.0001****	**-0.0002***	**-0.0002***
	(0.0000)	(0.0001)	(0.0001)
Cannabis	0.1838	0.1604	0.1843
	(0.1139)	(0.2723)	(0.3240)
Consumer	0.0453	0.1079	0.0582
	(0.0656)	(0.1570)	(0.1867)
Energy	0.0001	-0.0136	0.1314
	(0.0587)	(0.1403)	(0.1670)
Financial	-0.0073	-0.0365	0.0009
	(0.0495)	(0.1185)	(0.1409)
Food	0.1003	0.0654	0.2817
	(0.0639)	(0.1529)	(0.1819)
Healthcare	-0.0216	-0.0838	-0.0554
	(0.0434)	(0.1037)	(0.1234)
Industrial	0.0413	0.0480	0.0994
	(0.0501)	-0.1199	(0.1426)
Materials	-0.0166	-0.0313	-0.2417
	(0.1133)	(0.2710)	(0.3224)
Media & Entertainment	-0.0940	-0.0642	-0.0096
	(0.0659)	(0.1576)	(0.1875)
Real Estate	-0.0337	0.2818	0.2732
	(0.0741)	(0.1773)	(0.2109)
Technology	-0.0503	0.0017	0.1548
	(0.0462)	(0.1104)	(0.1313)
Travel & Hostpitality	-0.0050	-0.2359	0.0799
	(0.0838)	(0.2003)	(0.2383)
Constant (Automotive)	0.0668*	-0.0052	-0.2186*
	(0.0392)	(0.0938)	(0.1116)
Observations	232	232	232
R-squared	0.0779	0.0493	0.0484

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Similar as above, the natural logarithm is incorporated to control for outliers and proportionality. From table 19 we find that the relationships we saw above still point in the same direction, however now only the 2- and 90-day returns are statistically significantly impacted from the logarithm of the time from IPO to deal close. This implies, as we expected, a negative correlation between the time period between SPAC IPO to deal close and returns for the investor.

Table 19: This table presents the 2-, 30- and 90-day CAR regression on the logarithm of time between IPO and deal close controlling for industry fixed effects

VARIABLES	2-day return	30-day return	90-day return
Logarithm of time from IPO to deal close	**-0.0516****	-0.1010	**-0.1403***
	(0.0256)	(0.0612)	(0.0727)
Cannabis	0.1855	0.1648	0.1992
	(0.1145)	(0.2734)	(0.3245)
Consumer	0.0421	0.1018	0.0524
	(0.0658)	(0.1572)	(0.1866)
Energy	0.0001	-0.0137	0.1310
	(0.0589)	(0.1406)	(0.1670)
Financial	-0.0084	-0.0386	-0.0011
	(0.0497)	(0.1187)	(0.1409)
Food	0.0983	0.0621	0.2826
	(0.0641)	(0.1531)	(0.1817)
Healthcare	-0.0239	-0.0881	-0.0616
	(0.0435)	(0.1040)	(0.1234)
Industrial	0.0409	0.0473	0.1004
	(0.0503)	(0.1201)	(0.1426)
Materials	-0.0191	-0.0358	-0.2449
	(0.1137)	(0.2715)	(0.3223)
Media & Entertainment	-0.0963	-0.0680	-0.0098
	(0.0661)	(0.1578)	(0.1874)
Real Estate	-0.0346	0.2799	0.2701
	(0.0744)	(0.1777)	(0.2110)
Technology	-0.0483	0.0003	0.1581
	(0.0469)	(0.1119)	(0.1329)
Travel & Hostpitality	-0.0067	-0.2384	0.0819
	(0.0840)	(0.2007)	(0.2383)
Constant (Automotive)	0.3287**	0.5090	0.5115
	(0.1561)	(0.3727)	(0.4425)
Observations	231	231	231
R-squared	0.0756	0.0485	0.0506
Standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

5.5.3 Lead Underwriter Fixed Effects

In further tests, we also control for lead underwriter fixed effects. See table 20. Once controlling for lead underwriter fixed effects, we do not find any significant results. The change in significance could be due to a lack of statistical power, or because the skill and/or quality of the underwriter may directly relate to the time of deal close, and the fixed effects capture this. Hence, the relationship between the underwriter skill is the factor driving the return/time relationship. Since all effects on time from IPO to deal date are now insignificant, one must assume that the effects we observed earlier are due to the average effects of the underwriters. To examine this further, we add a regression on underwriter experience and time spent from IPO to deal close, to find out whether this is the real driver of increased returns.

Table 20: This table presents the 2-, 30- and 90-day CAR regression on time between IPO and deal close controlling for lead underwriter fixed effects

VARIABLES	2-day return	30-day return	90-day return
Time from IPO to deal close	-0.0001	-0.0002	-0.0002
	(0.0000)	(0.0001)	(0.0001)
2. BTIG	-0.0737	-0.0324	-0.1076
	(0.1166)	(0.2836)	(0.3326)
3. Barclays	-0.1042	-0.4081	**-0.5785***
	(0.1043)	(0.2536)	(0.2974)
4. BofA Securities	0.1609	0.3581	0.0570
	(0.1476)	(0.3590)	(0.4210)
5. Canaccord Genuity	0.1578	0.3565	0.4094
	(0.1950)	(0.4742)	(0.5561)
6. Cantor Fitzgerald	0.0962	0.0932	-0.1865
	(0.0812)	(0.1974)	(0.2315)
7. Chardan	0.0841	0.0501	-0.1143
	(0.0916)	(0.2229)	(0.2614)
8. Citigroup	0.0927	0.0579	-0.0592
	(0.0812)	(0.1974)	(0.2315)
9. Cowen	0.1281	0.2403	0.0992
	(0.0974)	(0.2369)	(0.2778)
10. Credit Suisse	0.0659	0.0481	-0.0587
	(0.0836)	(0.2034)	(0.2385)
11. Deutsche Bank	0.0974	0.2513	0.0569
	(0.0805)	(0.1957)	(0.2295)
12. EarlyBird Capital	0.0272	-0.0467	-0.2521
	(0.0872)	(0.2121)	(0.2487)
13. FBR Capital Markets	0.0663	-0.0874	-0.3183
	(0.1948)	(0.4739)	(0.5557)
14. Goldman Sachs	0.0019	0.1603	0.0710
	-0.0904	(0.2199)	(0.2579)
15. I-Bankers Securities	-0.0799	-0.1949	-0.8292
	(0.1951)	(0.4746)	(0.5565)
16. JP Morgan	-0.0241	0.1068	-0.0478
	(0.1047)	(0.2548)	(0.2988)
17. Jefferies	0.0186	0.1919	-0.2323
	(0.0873)	(0.2125)	(0.2491)
18. Jones Trading	0.3142	0.4891	0.3713
	(0.1950)	(0.4743)	(0.5562)
19. Ladenburg Thalman	**-0.4690*** **	-0.2096	-0.5094
	(0.1477)	(0.3593)	(0.4214)
20. LifeSci Capital	0.0486	-0.5107	**-0.7555***
	(0.1474)	(0.3586)	(0.4205)
21. Maxim	-0.1796	0.2234	**-0.9831*** **
	(0.1165)	(0.2833)	(0.3323)
22. Morgan Stanley	0.0249	0.0297	-0.3531
	(0.1045)	(0.2541)	(0.2979)
23. Nomura	0.0649	0.1239	-0.1982
	(0.1473)	(0.3582)	(0.4201)
24. Oppenheimer	0.0368	-0.0469	0.0925
	(0.1165)	(0.2834)	(0.3324)
25. Piper Sandler & Co	0.0211	-0.1459	-0.6001
	(0.1952)	(0.4747)	(0.5567)
26. Raymond James	0.0400	0.2621	-0.2689
	(0.1953)	(0.4750)	(0.5570)
27. Roth Capital Partners	0.1034	-0.2936	-0.5497
	(0.1476)	(0.3590)	(0.4210)
28. SVB Securities	0.0052	0.5851	0.2304
	(0.1950)	(0.4744)	(0.5563)
29. Stifel Nicolaus	0.1654	-0.0508	-0.3447
	(0.1950)	(0.4744)	(0.5563)
30. ThinkEquity	**0.4461****	0.6131	0.2592
	(0.1954)	(0.4752)	(0.5572)
31. UBS	0.1583	0.4182	0.2196
	(0.1045)	(0.2543)	(0.2982)
32. Wells Fargo	-0.0770	**0.7849****	0.4483
	(0.1478)	(0.3594)	(0.4215)
Constant (B. Riley FBR)	-0.0086	-0.1169	-0.0795
	(0.0782)	(0.1902)	(0.2230)
Observations	232	232	232
R-squared	0.2213	0.1696	0.1923
Standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

5.5.4 Time as a dependent variable

As mentioned, we want to explore whether the underwriter experience drives the time used to close the deal, hence if it is a dependent variable instead of an independent. Does the experience of an underwriter provide certification to the sponsor, who may then be able to close the deal faster?

By regressing the time from IPO on deal count, the results portrayed in table 21 show a statistically significant relationship between the variables at a 1% significance level. A unit increase in prior deals results in a decrease of 5.86 days used in time from IPO to deal close. These findings imply that the time used between IPO and deal close has a strong negative correlation related to the underwriter's prior deal count experience.

Table 21: This table presents the regression on time from IPO to deal close on underwriter's prior deal count

VARIABLES	Time from IPO to deal close
Prior Deals	**-5.8662*** **
	(2.1208)
Constant	520.7336***
	(23.9423)
Observations	232
R-squared	0.0322
Standard errors in parentheses	
*** p<0.01, ** p<0.05, * p<0.1	

Similarly, the results after regressing time from IPO and total deal volume (table 22) pointed in the same direction. We found that one increase in prior deal volume will result in a decrease of 1.35 days used in time from IPO to deal close. Hence, one can state that the experience is negatively correlated with the time used.

Table 22: This table presents the regression on time from IPO to deal close on underwriter's prior deal volume

VARIABLES	Time from IPO to deal close
Prior Deal Volume	-1.3453***
	(0.4829)
Constant	517.6742***
	(23.0744)
Observations	232
R-squared	0.0326
Standard errors in parentheses	
*** p<0.01, ** p<0.05, * p<0.1	

Multivariate regression

To check whether one might be a proxy for the other, we incorporated both time from IPO to deal close and underwriter experience in a multivariate regression on the returns. We run regressions in terms of both deal count and total deal volume.

The results portrayed in table 23 using prior deal count, only shows a statistically significant result for a positive effect of prior deal count on the 2-day return and a negative effect of time on the 30-day return. Thus, the results are in line with previous findings, stating that an increase in prior deals will increase returns short-term, and decrease the time an underwriter uses to close a SPAC deal.

After implementing the effect of experience together with time used on the returns, we find that the experience does not change the coefficient of time. Hence, the experience does not explain the negative correlation between time and return. That is, it is clear that an experienced underwriter has a significant impact on the time used from IPO to deal close. However, no matter how experienced the underwriter is, a longer time period from IPO to deal close will nevertheless imply lower returns for the investor.

Table 23: This table presents the multivariate CAR regression on returns with time from IPO to deal close and prior deal count

VARIABLES	2-day return	30-day return	90-day return
Time from IPO to deal close	-0.0001	**-0.0002***	-0.0002
	(0.0000)	(0.0001)	(0.0001)
Prior Deals	**0.0034****	-0.0033	-0.0047
	(0.0016)	(0.0038)	(0.0045)
Constant	0.0222	0.0227	-0.1301
	(0.0310)	(0.0738)	(0.0878)
Observations	232	232	232
R-squared	0.0368	0.0162	0.0141
Standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

To continue from table 24 regarding total prior deal volume, we find the same indications as above, being that a unit increase in prior deals will positively affect the returns short-term and an increase in time spent from IPO to deal close will negatively affect the returns. Some relationship – but capturing two different aspects of effects on returns.

Table 24: This table presents the multivariate CAR regression on returns with time from IPO to deal close and prior deal volume

VARIABLES	2-day return	30-day return	90-day return
Time from IPO to deal close	-0.0001	**-0.0002***	-0.0002
	(0.0000)	(0.0001)	(0.0001)
Prior Deal Volume	**0.0008****	-0.0007	-0.0007
	(0.0004)	(0.0009)	(0.0010)
Constant	0.0233	0.0169	-0.1493*
	(0.0305)	(0.0726)	(0.0866)
Observations	232	232	232
R-squared	0.0377	0.0154	0.0114
Standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

5.5.5 Conclusion

To summarize, the univariate regression implies a negative statistically significant relationship with the time from IPO to deal close on the 2- and 30-day return with an

effect of 0.01 and 0.02 percentage points respectively. The result was negative, but not significant, for 90-day returns.

Once we implemented the industry fixed effects control, the time from IPO to deal close showed a statistically significant negative effect on returns in all time periods. Hence, the results from the univariate regression have been biased by industry fixed effects, as the effect on 90-day returns is now significant.

However, once the lead fixed effects were accounted for, the results of the effects in all periods came out insignificant. This implies that the results we observe in the univariate regression are objected to bias from the average effects of the lead underwriter. Hence, when we remove these effects – the time from IPO to deal close seems to have no significant effect on returns.

After observing that the results were insignificant after the lead underwriter fixed effects were accounted for, we wanted to examine whether the implied relationship between time and returns was driven by underwriter experience. Consequently, we found that the time used from IPO to deal close has a strong negative correlation with the experience of the underwriter. Moreover, in a multivariate regression, we found a separate negative correlation between time and returns, and positive short-term return on both deal count and volume, which is in line with previous findings.

To conclude, the results obtained above are in line with our expectations, being that the SPAC deals where the sponsors use longer time to determine a target company and close the deal, performs worse post-close. All findings point in the same direction coefficientwise, hence an increase in time used between IPO and deal close results in lower returns for the investor.

6 Conclusion

The goal of this thesis was to examine what effects the different characteristics of a SPAC's underwriter have on the 2-, 30-, and 90-day performance. Examining a dataset consisting of 232 SPACs issued between 2015 and 2021 provides evidence that different underwriter characteristics affect the investors' short- and long-term returns.

In the analysis of the Megginson-Weiss reputation measure in hypothesis 1, we find significant positive effects from an increase of market share in both deal counts and deal volume, measured both relatively and ranked. The findings implied that having a higher market share measured by deal count is associated with better deals as evaluated by the market in both the short and long term. Only the long-term returns were statistically significantly affected by an increase in the underwriters' market share of total deal volume.

To continue, we studied the effects of the underwriters' deal counts' absolute values in hypothesis 2 and the effects of the underwriters' total deal values in hypothesis 3. We observe the same pattern for both the deal count and deal value analysis. To differentiate from hypothesis 1, the variables were now not in their market share relative to the industry total, but the absolute values. In addition, we implemented industry-fixed effect and lead underwriter fixed effect controls to enhance validity and robustness. The control for industry-fixed effects was limited in both deal count and deal volume and entailed no significant changes in the result. Once we however controlled for lead underwriter fixed effects, the findings shifted, implying that a higher deal count only statistically significantly affects the long-term returns negatively. The coefficients indicate the same throughout the absolute analyses – an underwriter's higher total deal volume will affect the excess return of the SPAC positively in the short-term and negative in the long term. When the indicators diverge like this, it may imply a reversal, implying that transaction experience is not necessarily a reliable measure of underwriters' SPAC deals' long-term success.

Interestingly, the analyses on the MW market share versus the absolute values differ. When examining the market share, the coefficients were positive for all time periods, whereas for the analyses on the absolute values, there seemed to be a negative effect of

experience on the long-term returns. One possible explanation for this could be that over time, these deals are doing worse, and the market is learning that skill and reputation of the underwriter are less important for SPACs relative to what one might expect for traditional IPOs.

The findings obtained from the underwriter syndicate composition analysis were not statistically significant on the analysis of one vs. several underwriters or the analysis of the exact number of underwriters. Therefore, these results imply no correlation between the underwriter syndicate composition and the CAR.

Moreover, findings indicate that there are some interesting relationships between the time used from IPO to deal close, returns and experience. Our first results implied that a longer time period from IPO to close resulted in lower returns. These findings were however invalid once lead underwriter fixed effects were accounted for. Therefore, we added an analysis of whether it is the experience of the underwriter that drives the time used from IPO to close, which could potentially be the driving factor for the increased returns. We find that there indeed is a strong negative relationship between underwriter experience and time used from IPO to deal close, as an increase in experience substantially lowered the time need to close a deal. However, we also observe that there is still a separate effect of time from IPO to close that is not related to the underwriter experience. That is, no matter the experience of the underwriter – a longer period of time from IPO to deal close will nevertheless imply lower returns.

Additional areas suited for further research might include broadening the geographical reach, as our study was only conducted on SPACs in the United States and Canada. In addition, on March 30, 2022, the SEC proposed new rules relating to SPACs. The proposals are designed in improve the usefulness and clarity of the information provided to the investors, and to enhance investor protections (Bellin, Watson, & Gleason, 2022). What could be interesting to examine related to this, is whether the rules, of which targets investor protection and likely will remove some of the potential upside for the sponsors, will result in a decrease in SPAC activity – as it is no longer as profitable for the sponsors. Other interesting aspects of the matter could be examining whether SPACs completed after these new rules apply provide investors

with better returns, as it may be more difficult for the sponsors to make bad deals in a rush.

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