Pihla Lohi

# The value effects of M&A transactions for U.S. SPACs

An examination of the short-term value effects in 2014–2021

School of Accounting and Finance
Master's thesis in Finance
Master's Degree Programme in Finance

Vaasa 2022

**UNIVERSITY OF VAASA**
**School of accounting and finance**
**Author:** Pihla Lohi
**Title of the Thesis:** The value effects of M&A transactions for U.S. SPACs : An examination of the short-term value effects in 2014–2021
**Degree:** Master of Science in Economics and Business Administration
**Programme:** Master's Degree Programme in Finance
**Supervisor:** Sami Vähämaa
**Year:** 2022 **Pages:** 61

**ABSTRACT:**
The purpose of this thesis is to study the short-term value effects of merger and acquisition (M&A) announcements and completions on U.S. special purpose acquisition companies. The goal is to find if any abnormal returns are realized and whether the announcements create or destroy shareholder value. Shareholder value is defined as the price fluctuations of the publicly traded stock of the SPAC. The hypotheses are constructed based on earlier empirical research and the study sample in this thesis consists of M&A announcements and completions between January 2014 and June 2021.

The stock price data is obtained from Refinitiv database, and the empirical research is conducted by using the market adjusted event study methodology. Russell 2000 index is chosen for the benchmark index, following earlier research. Event windows for the examination are [-10,10], [-5,5], and [-1,1]. To statistically test the results, a t-test is also run. The first hypothesis states that M&A plan announcements create shareholder value and the second hypothesis states that M&A completion announcements destroy shareholder value. The results of this thesis find that M&A plan announcements do create shareholder value, by cumulative abnormal returns of 8,71%, 9,48%, and 8,14% from the longest event window to the shortest, respectively. These results are statistically significant at 1% significance level and thus, the first hypothesis is accepted. The results also show that M&A completion announcements destroy shareholder value by cumulative abnormal returns of -5,39%, -5,92%, and -0,57% from the longest event window to the shortest. The middle value is statistically significant at 10% significance level, and the first is very close. Therefore, taking into consideration both earlier literature and the value distribution between companies and time, the second hypothesis is also accepted.

Based on the findings of this thesis, M&A transactions cause abnormal returns for SPAC shareholders even today, and to maximize and secure one's returns, it should be taken into consideration when making investment decisions.

**KEYWORDS:** Special purpose acquisition company, Mergers and Acquisitions, Abnormal return, Event study, Shareholder value

## Contents

## Figures

## Tables



## Abbreviations

**SPAC = Special Purpose Acquisition Company**
**IPO = Initial Public Offering**
**SEC = Securities and Exchange Commission**
**AR = Abnormal Returns**
**CAR = Cumulative Abnormal Returns**
**AAR = Average Abnormal Returns**
**CAAR = Cumulative Average Abnormal Returns**
**M&A = Mergers and Acquisitions**
**OTC = Over The Counter**
**PE = Private Equity**
**VC = Venture Capital**
**LBO = Leveraged Buy-Out**
**GP = General partner**
**LP = Limited partner**

# 1 Introduction

Raising money from the capital markets through a traditional initial public offering (IPO) has been of interest and under examination for decades. However, the alternative ways of going public have not gained such attention and only a limited number of studies concern the nowadays rather popular special purpose acquisition companies (SPACs).

During the recent years, the U.S. capital markets have faced a stark rise in the use of SPACs as a tool for going public. SPACs are non-operating shell companies which are only created for the purpose of acquiring a private company by a reverse merger and providing a public status to it over the process. SPACs raise capital through an initial public offering and have a limited time of most commonly two years to complete the acquisition. In case the acquisition is not completed, the SPAC will be liquidated, and the raised money will be returned to the external shareholders. SPACs provide an alternative to the traditional IPOs and as can be seen from figure 1, they have rather rapidly gained popularity at least in the U.S. markets.

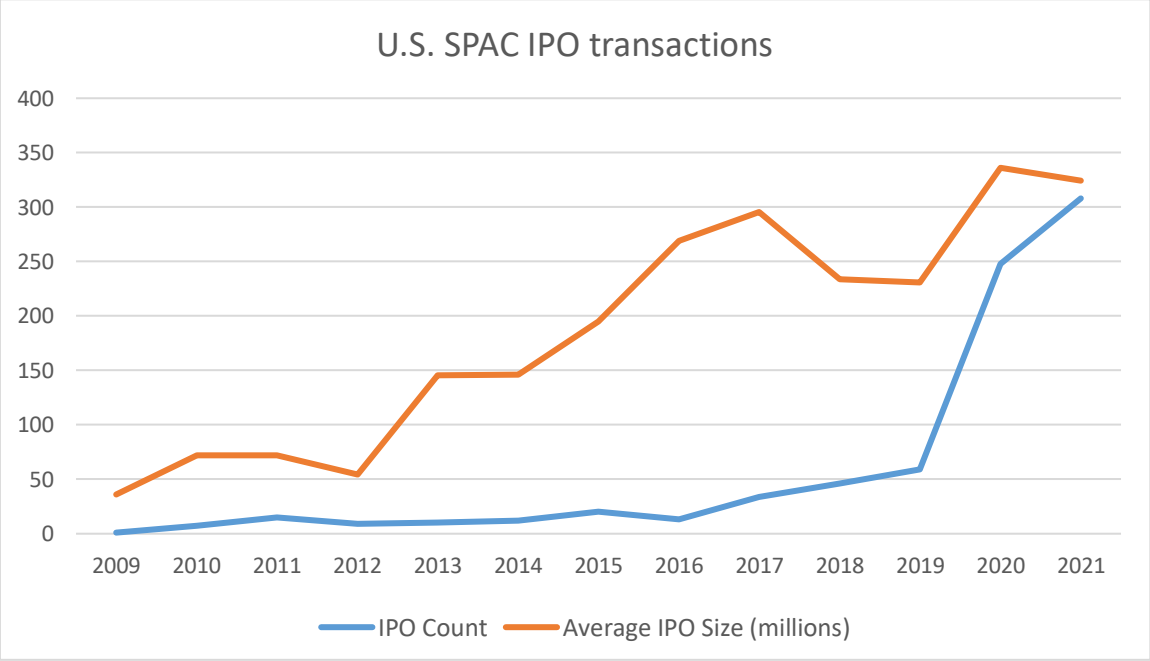


**Figure 1.** U.S. SPAC IPO transactions (SPACInsider, 2021).

SPACs have obtained importance over time and are now an asset class of their own and widely recognized in the financial markets. SPACs have existed since the 1990s but due to the booming IPO market in the late 90s, they became less popular by the end of the decade. In 2003, SPACs returned and gained large popularity until the global financial crisis hit in 2008. A recovery began after 2009 and SPAC markets activated slowly. When the national exchanges started listing SPACs in 2014, the interest in them increased and over the last few years, the volume has kept further accelerating.

## 1.1 Purpose of the study

The purpose of this thesis is to examine the short-term value effects of U.S. SPACs at different times after the initial public offering of the company. This thesis aims at discovering any abnormal returns around the times of the acquisition announcement and the acquisition completion. The study contributes to the topic by providing findings concerning a recent time period of 2014–2021. Previous literature focuses mainly on the pre-financial crisis era and thus, an opportunity for further findings regarding this new wave of SPACs occurs. Due to institutional and structural changes in the SPAC markets, comparatively differing findings are possible. In addition, the COVID-19 pandemic may be causing differing results due to the very unique global situation and uncertain market conditions.

## 1.2 Hypotheses development

The hypotheses are formulated based on earlier research regarding the impact on SPACs' stock market valuation caused by these particular transaction news (Floros & Sapp, 2011; Lakicevic & Vulanovic, 2013; Bodewes, 2021; Klausner, Ohlrogge & Ruan, 2020). The hypotheses follow the empirical results of the short-term effects obtained in these previous studies. This thesis includes two main hypotheses that are the following:

$H_1$: M&A announcements by SPACs create shareholder value.

Several previous studies find that in general the announcements of M&As by SPACs increase shareholder value since the stock market shows positive abnormal returns for a short-term event window (Floros & Sapp, 2011; Lakicevic & Vulanovic, 2013; Bodewes, 2021). At this stage, the SPAC and its stock market movements are no longer reliant only on the reputation of the managers, since the actual target company and a plan of a merger are announced. Thus, shareholders have more actual substance to look into, and the SPAC is a step closer to being successfully consummated. In this thesis, an increase in shareholder value is regarded as an increase in a SPAC's stock market value and a decrease in shareholder value is thus considered as a decrease in a SPAC's stock market value. These value changes are then compared to a benchmark index to avoid misinterpreting information due to market volatility.

$H_2$: M&A completions by SPACs destroy shareholder value.

Previous research also finds that the announcement of a completed merger or acquisition generally destroys shareholder value (Floros & Sapp, 2011; Lakicevic & Vulanovic, 2013; Klausner et al., 2020). This is found to be partially due to managerial incentives that are not in line with those of shareholders' (Dimitrova, 2017; Floros & Sapp, 2011). SPAC managers tend to complete a deal even if it was a bad one to obtain their fees. In general, the stock market experiences negative abnormal returns on a short-term event window around M&A completion dates.

## 1.3 Structure of the study

The first chapter introduces the topic and its importance including paragraphs discussing the purpose of the study and the development of the hypotheses. The second chapter

provides the theoretical framework around the topic, concentrating on issues such as the ways of going public, aspects of private equity, special purpose acquisition companies as a whole, and finally mergers and acquisitions and value creation related to them. The third chapter discusses previous literature and their findings on the subject, involving a few newer working papers alongside older published articles. The fourth chapter presents the data and methodology used in this study and the fifth chapter provides all found results and interpretation of them. Finally, the sixth chapter concludes it all by summarizing the main idea, findings, and possible future developments to the research of the topic.

# 2 Theoretical overview

This chapter discusses the theoretical framework around special purpose acquisition companies to provide a larger understanding of them as a financial instrument.

## 2.1 Going public

One commonly deliberated question among the corporate finance field is that why do companies decide to go public. In general, the initial answer is the acquirement of additional funds and the participation in public markets so that founders and shareholders may liquidate their shares to cash at any given time. Ritter and Welch (2002) describe that the topic has been subject to a wide range of research and the most prominent two factors affecting the decision whether to go public or not are the market conditions and the stage of a firm's life cycle.

Going public is often seen as a prideful milestone for a company and for the careers of its managers (Cendrowski et al., 2012, pp. 69–70). A public company is generally regarded as a more stable and long-lasting entity than a comparable private company. Going public provides a company with a relatively quick and easy way to raise large amounts of funds, which is especially appreciated by companies that have significant growth opportunities but a lack in their capital reserves. In addition, a public company usually has better abilities to obtain debt financing with better terms than if it was private.

However, downsides also occur for a company going public (Cendrowski et al., 2012, p. 70). The process of going public itself has high expenses and the consequential costs related to securities law compliance are continuous and remarkable. The extent of regulations a public firm is subject to is significant in comparison to a private firm.

### 2.1.1 Initial public offering

An initial public offering (IPO) essentially means offering the company's shares for sale for outside investors to purchase on a stock exchange (Brealey et al., 2020, p. 396). It is the most common way for companies to access the public markets. In a primary offering, new shares are sold in order to collect additional funds for the company and in a secondary offering, the already existing shareholders sell a portion of their stake in the company to raise cash for themselves. Typically, an IPO consists of both of these forms. However, the secondary offering is often denied by the underwriters for a predetermined time period which is called the lock-up period. During this time period, the existing shareholders are not allowed to sell their shares on the open market.

For a private company to go public, the first action involves the choice of an appropriate underwriter (Cendrowski et al., 2012, pp. 72–73). The two most crucial aspects when deciding on the underwriter are their reputation and their suggested share price for the offering. Underwriters are responsible for a variety of actions, which are for example the marketing of the IPO, conducting due diligence on the private company, aiding lawyers with regulatory filings and proposing a suitable IPO size. The selection of a competent underwriter is a major factor in terms of the further success of the company.

Once an agreement has been obtained with an underwriter, the company must file a registration statement for the SEC which consists of a prospectus and a so-called S-1 registration document (Cendrowski et al., 2012, p. 74). The SEC will then inspect the documents and ask for revisions if necessary. Once all issues have been declared the registration is effective and the primary offering of shares may be started.

The costs related to a traditional IPO are split into direct and indirect costs (Gahng et al., 2021). The direct costs comprise the commissions of underwriters and the indirect costs are due to the underpricing of IPO deals. The underpricing is a consequence of a consistently seen phenomenon in the IPO markets, where the shares are offered at a lower price than the market price of them shortly after the IPO.

### 2.1.2 Reverse merger

A reverse merger is a non-traditional form of entering the public markets (Sjostrom, 2007). Typically, when referred to M&As, the discussion is about forward mergers in which the acquiring company pays the target company in either cash or an equity stake as compensation for the merger (Cendrowski et al., 2012, pp. 111–113). However, an opposite approach is a reverse merger, in which the acquiring public company is compensated by an equity stake in the target company for merging into the target company.

In a reverse merger, an operating private company is acquired by a public shell company (Sjostrom, 2007). As a result, the assets and liabilities of the former operating private company are retained by the shell, and it is being controlled by the acquired private company's shareholders. The name of the shell is changed, and the managers are replaced by the private company's managers. The public stock continues to trade at the same exchange as it did before the merger took place. Therefore, the operating company remains the same in terms of control and management but transforms regarding the public status.

A company is called a public shell company if it has no operations and no assets besides cash or only a nominal amount of such, and it has securities registered under the Securities Exchange Act of 1934 (Sjostrom, 2007). The existence of a public shell is due to either a former operating company ceasing its operations or a shell being created from scratch. The latter offers an attractive opportunity since all required filings are simpler and more inexpensive for a company with no previous operations.

By entering a reverse M&A deal, the advantages that come alongside going public are achieved without some of the negative characteristics related to a traditional IPO (Cendrowski et al., 2012, pp. 111–114). The reverse merger, sometimes referred to as a reverse takeover, has shown to be a popular exit vehicle for private equity portfolio

companies since the manner allows for private companies to become public more efficiently. For example, the lock-up period is completely avoided in an M&A transaction. A reverse merger often demands less stock dilution than what is required in an IPO since the takeover does not require any sales of stocks. The private companies also do not have to raise additional capital which is an obligatory aspect in an IPO. As the process of an IPO generally lasts for at least one year, a reverse merger can be completed in about a month as a whole. Reverse mergers are also relatively unaffected by challenging times and factors that harm the IPO markets since the deal only concerns the target and the acquirer.

Mergers and acquisitions will be further discussed in section 2.4.

## 2.2 Traditional private equity

For one to truly understand the essence of SPACs, the origins of them must be understood first. A wide range of SPAC's elements stem from the world of private equity and therefore the aspects that differ are better understood when explained in a wider context of private equity.

Private equity (PE) is a vital part of contemporary finance (Cendrowski et al., 2012, pp. 3–4). PE comprises many forms of investment, of which venture capital (VC) and leveraged buyout (LBO) are the most common and thus, the ones discussed in this thesis. In addition to VC and LBO, private equity includes investments for example on hedge funds, fund of funds, private investment in public equity, distressed debt funds and angel financing. PE is defined as a medium- or long-term equity investment in any security that is not publicly listed on an exchange. Like for almost every theoretical definition, also this one has its exceptions. PE also includes transactions of purchasing a public company and then making it private by delisting it. However, for most parts, the definition above holds.

The rise of private equity's popularity began slowly in the 1980s and continued increasing significantly in the 1990s (Cendrowski et al., 2012, pp. 3–5). The volume of PE transactions has been heavily cyclical and although the amount of capital placed in PE is large, relatively few investors understand its characteristics and given opportunities and challenges. Since PE investments are not traded on any exchange and thus, they are not subject to any actions of market makers, they are typically illiquid. The investments are usually held for several years before an opportunity for liquidating one's share occurs.

PE investments can be divided into two categories: fund investing and direct investing (Cendrowski et al., 2012, pp. 3–5). Typically, institutional investors, like pension funds, invest in a PE fund which then allocates the capital into portfolio companies. This way, the pension fund managers take part in fund investing and the PE fund managers in direct investing. PE funds are instruments of private investment that provide their investors with increased diversification and purchasing power in the market segment in comparison to a direct investment in a portfolio company. Many PE companies also offer their investors an opportunity to invest in numerous funds.

### 2.2.1 Venture capital

Venture capital funds invest in companies that are in a very early stage of their lifespan (Brealey et al., 2020). The aim is to take on the investment in a stage where the market valuation of the company is still low so that the eventual profit could be multiple times the original investment at the time of a potential IPO or acquisition. In an optimal setting, VC funds cooperate with the targets' managers in order to help the company grow. Due to target company selection and advisory of competent venture capital professionals, venture-backed firms tend to succeed better than regular start-up firms (Kanniainen & Keuschnigg, 2004). The investors of VC funds are typically either wealthy individuals or institutions like pension funds or insurance companies (Sahlman, 1990).

The structure of VC funds is usually constructed as a limited partnership, in which investors take the role of limited partners (LP) and the managers the role of general partners (GP) (Cendrowski et al., 2012, pp. 5–7). The capital for the investments in portfolio companies comes from numerous LPs and the investment choices are made by the GPs. LPs are not involved in the operations of the fund, but they receive quarterly statements and other reports for the matter of transparency of the fund's operations. VC funds also have a limited lifespan and thus, at the end of their legally determined existence, all funds are distributed accordingly (Sahlman, 1990). This time limitation demands for good reputation of managers, since successful prior funds may provide their managers better opportunities to capitalize even larger funds in the future.

The compensation of venture capital managers is a general topic of concern in the field of private equity (Sahlman, 1990). In an optimal setting, the incentives of GPs are consistently aligned with the interests of the LPs. Thus, GPs are mostly compensated by a share of the earned profits, instead of a fixed fee. Often managers are also required to invest a fraction of the funds raised by using their own capital. This requirement provides additional motivation for the managers, since not only their compensation relies on the performance of the fund, but they also risk losing their own capital if the fund performs poorly.

### 2.2.2 Leveraged buyout

As VC funds focus on premature early-stage companies, leveraged buyout funds aim at acquiring mature companies that are able to provide steady a cash flow that exceeds the expenditure consistently (Kaplan & Stromberg, 2009). Also, as the term itself suggests, these kinds of acquisitions are highly leveraged. The share of debt financing is typically between 60 to 90 percent.

The constant excess of funds in the company produces a high risk for agency costs since those funds may be spent on low-return projects rather than for example be paid out as

dividends or be invested in potential high-reward targets (Jensen, 1986). Leveraged buy-outs are referred to be a solution to the problem as they use the company itself as collateral to the high share of debt used for the acquisition. The regular loan payments cover a major part of the exceeding funds and therefore the issue of the funds' placement vanishes.

Although the target company types differ between VC funds and LBO funds, the funds are highly similar in their characteristics. LBO funds are generally structured as limited partnerships, in which the company represents the GPs and investors outside represent the LPs (Kaplan & Stromberg, 2009). The investors represent similar groups in both funds, and they retain the same rights regarding decision-making and exit opportunities. The requirement of managers' own cash invested concerns also LBO funds and similar to VC funds, the lifetime is also fixed. The average lifespan of an LBO fund is around ten years.

The managers of LBO funds are generally compensated as they are in VC funds, which is a share of acquired profits (Kaplan & Stromberg, 2009). This share is typically 20 percent for both fund types and an additional annual management fee of around one percent may be granted as well. However, in LBO funds, a requirement may be set that a portion of the profits must be first distributed to the LPs before granting any to the GPs (Metrick & Yasuda, 2010). One major distinction to VC funds is that LBO fund managers must seek outside financing in advance for each investment (Kaplan & Stromberg, 2009).

## 2.3 SPACs

A SPAC, which is often referred to as a blank check company, is defined as a company that is created to raise capital through an IPO with the sole intention to acquire an operating business through a reverse merger (U.S. securities and exchange commission, 2021). SPACs repeat a lot of the characteristics involved in the PE field. They provide private equity available to the public by allowing any investor to invest in a public shell company that aims at acquiring a private company. They are, in fact, referred to as the

“poor man’s private equity funds” (Dimitrova, 2017). Although the investment resembles the characteristics of PE, it is purely public for the investor.

Compared to investing in a typical private equity or venture capital firm, SPACs offer a wide range of benefits while still maintaining the key features of PE (Finkelstein & Cooper, 2017, pp. 87–88). Unlike a SPAC investor, a PE investor does not obtain the possibility of liquidating one’s invested funds at any time given. The level of liquidity is high for SPAC stocks and low for a share of a PE company. Additionally, the transparency of SPACs is vastly higher in comparison to PE firms, due to a wider range of regulations that concern public companies. SPACs’ management teams typically do not receive any form of salaries or fees and thus their interests are probably more aligned to those of shareholders, than the management teams of PE firms. Also, SPACs have an advantage compared to private equity firms since they can issue equity or debt, after an acquisition, rather easily when other projects of high expenses occur.

A shell company can be created in two different ways (Feldman, 2018, p. 108). The first method is to use the remains of an already existing company that has gone out of business or was sold or liquidated. However, it can be both expensive and difficult to purchase a former operating shell that could provide a clean start for a forthcoming acquisition. If a shell is created from scratch, it is much easier to structure accordingly and thus, it is the more common method. These types of shell companies are called special purpose acquisition companies.

### 2.3.1 History

The modern SPACs that we know of now are found to have originated in the 18$^{th}$ century during the South Sea Bubble, when they were first mentioned as blind pools (Shachmurove & Vulanovic, 2018). Graham and Dodd (1934) detail that the blind pools were then imported to the U.S. capital markets at the beginning of the 1920s. However, their effect was left weak since a financial crisis hit right after. A slight rise in activity was seen in the

1980s and later on in the mid-1990s when the economy was just recovering from recession and the environment for SPACs was again slightly improving (Feldman, 2018, p. 109). Although companies were slowly growing to see potential in being public, the IPO market was not blossoming. Additionally, SPACs were widely misused by their managers due to ineffective regulatory measures, especially in the penny stock market (Riemer, 2007). Managers typically exercised their warrants the following day of an acquisition announcement and then dumped them after an expected positive market reaction occurred.

To prevent the fraudulent behavior and strengthen the trust among investors, the Penny Stock Reform Act (1990) was eventually approved by the U.S. congress (Riemer, 2007). As a consequence, the SEC created Rule 419a, which forces the SPAC managers to contain the funds raised in escrow accounts, determines that a target company must have net assets of at least 80% of the funds raised in the SPAC IPO, restricts any trading of blank check securities until a completed acquisition and finally, it requires quarterly and annual reports delivered for investors and the SEC. Due to these new regulations, the volume of SPACs decreased significantly (Heyman, 2007). For small- and mid-cap stocks, it also appeared that SPACs were countercyclical in relation to the IPO market (Feldman, 2018, p. 110). Thus, when the IPO market rocketed due to the internet boom in the late 1990s, the volume of SPACs was further decreased.

The restrictions regarding money raisal were found overwhelming for penny stock companies in many countries (Finkelstein & Cooper, 2017, p. 84). However, another approach was eventually discovered to successfully conduct a SPAC without complying with all restrictions (Feldman, 2018, p. 109). It was discovered that any company with assets of over five million dollars or an intention of seeking the amount in an IPO was allowed to complete the IPO without a need to comply with restrictions of Rule 419. This way, there were no requirements regarding escrow accounts, the way the money is used, the time to complete a deal, and no reconfirmation required from shareholders before closing a

reverse merger. The avoidance of these usual requirements allowed for saving both money and time, at least in theory.

However, a variety of SPAC managers decided to take a different approach and voluntarily apply some of the restrictions in order to attract investors and to convince the SEC not to disable the opportunity. Partly as a consequence, SPACs were revived in 2003 (Feldman, 2018, p. 111). Ultimately, an allowance was granted for SPAC stocks to be traded in the OTC Bulletin Board and later on the stocks were allowed to be traded also in the American Stock Exchange, nowadays called as NYSE American Exchange. SPACs became more popular and were used much more widely than in the 1990s. The industry was a lot different when compared to the first time SPACs were involved in the business. These new SPACs raised remarkably more money and the investors were far more conscious. Also, the management teams were getting very competent, and they included loads of accomplished and well-known financial actors. SPACs gained a lot of attention for a short while and by 2009, over 150 SPACs had become public and over 70 of them had completed a merger.

Between 2003 and 2009, about 75 SPACs raised over 100 million dollars per deal and the remaining 90 SPACs raised less (Feldman, 2018, pp. 112–113). In 2007, the smaller SPACs raised altogether 1,6 billion dollars, while the bigger SPACs raised up to 10 billion dollars and when the market declined in 2008, the respective numbers were 288 million dollars and 4,3 billion dollars. The reasons why the SPAC market declined so rapidly are diverse. It is commonly agreed that it was due to a combination of harsh market conditions, an overloaded market, and the underperformance of many stocks of former SPACs. Since many hedge funds and institutional investors found the vehicle attractive, the investor community ended up being rather limited. Eventually, when the SPACs got larger and the objectives greedier, there simply were not enough investors to attract. The credit crisis that had hit at the time also weakened the SPAC market.

Despite the difficulties, SPACs returned after a few years. One of the most remarkable risks in the previous generations' SPACs has been the risk of how the shareholders would vote on the merger deal (Feldman, 2018, p. 114). Consequently, many potential private companies began then avoiding SPACs due to the possibility of getting the deal rejected after months of work and preparation. Some investors even voted against the deals on purpose, since it was found that the return on their investment could be enhanced by this type of behaviour in certain situations. However, when a new era for SPACs began in 2014, this shareholder vote on the deal was replaced with a right to opt out of the merger through a tender offer. Another crucial improvement in these newer SPACs is that the requirement to complete the deal with a company from a certain industry or geographical area was eliminated. SPACs now do not necessarily have any focus determined, and the decision of one is left for the managers to make. The size of SPACs is also increasing with the average in 2015 being over 200 million dollars. Smaller deals are not very popular and the number of them has decreased.

The new wave of SPACs began around 2014 and is still going on (Feldman, 2018, p. 113). The return of SPACs is believed to be a consequence of the overall enhancing of the equity markets and the change in SPACs' structure. SPACs were ultimately approved by the national exchanges and the trading of SPACs with the tender offer approach has been allowed on the New York Stock Exchange since March 2017. These reforms have drastically facilitated the SPACs new rise.

### 2.3.2 Lifecycle and characteristics

The lifespan of a SPAC begins when its underwriters declare an intention of conducting an IPO by filing the Form S-1 to the SEC (Shachmurove & Vulanovic, 2018). Once the SEC verifies the form, the management and underwriters begin preparing for the upcoming IPO. A final prospectus, which states all changes to the initial registration, is filed just before the IPO date. It determines many details concerning the life of the particular SPAC. SPACs are usually formed by a small selection of experienced and well-reputed managers

and the success of the IPO is mostly reliant on the managers' reputation to raise funds by forming a public shell company (Dimitrova, 2017). As the IPO is being executed, the managers do not have a target company selected but they typically have an industry, or a region of preference based on their earlier experience.

The IPO is typically structured so that the securities issued are so-called units (Shachmurove & Vulanovic, 2018). A unit is a security which contains a certain number of both stocks and warrants, of which the latter one can be exercised at a predetermined price sometime in the future. However, these warrants can be exercised only after an acquisition by the SPAC is complete. The common shares are usually separated from the warrants, and they are traded independently after a completed IPO. As stated by Chemmanur and Fulghieri (1997), risky companies like SPACs benefit from choosing units, rather than stocks, as securities issued. Units provide further dilution of securities in a longer time perspective, and they also solve problems related to information asymmetry (Shachmurove & Vulanovic, 2018). In the early days, a unit usually consisted of one common share and two in the money warrants. Recently, SPAC units have mostly included one share and either one half or one-third of an out of the money warrant. For the purpose of avoiding penny stock regulations, the units are priced above a 5-dollar limit. The shares included in units are classified as A shares, but also class B shares occur (Gahng et al., 2021). These class B shares are typically granted to sponsors and affiliates as compensation for the formation of the SPAC and they do not include a voting right and are not redeemable, in contrast to class A shares.

After the completion of the IPO, a minimum of 90% of the proceeds gathered are set in escrow accounts of an independent custodian, until an acquisition takes place (Clifford Chance, 2021). The funds are released at either the time of an acquisition or the liquidation of the SPAC (Dimitrova, 2017). These two possible events are known as the exit opportunities of the SPAC. The time limit for finding a target company and conducting the acquisition is most commonly two years.

The search for an applicable target begins right away after the IPO due to the limited time frame of finding a target company and the extreme incentives placed on managers to find one. The managers of a SPAC are usually compensated by a noteworthy interest in their share of the SPAC rather than by a traditional salary in cash. Their shares are purchased and placed privately before the IPO occurs and also, they are often granted an opportunity to purchase warrants, with an excessive discount, amidst the IPO. If the deal is successful, the gain for the managers can be massive. But, in case the SPAC is eventually liquidated, the managers do not receive any compensation for their share of stocks and warrants. This compensation structure creates a significant financial incentive for the managers to find a target company of practically any kind before the SPAC's expiration date.

The minimum deal size for a SPAC is 80% of the funds raised in an escrow account (Finkelstein & Cooper, 2017, pp. 86–87). The great reserve of funds is often used for financing prospective growth opportunities and for restructuring the balance sheet of the target company. A SPAC is typically not allowed to take on debt financing for long-term purposes before the acquisition has been completed. After an appropriate target has been discovered, an announcement is placed for the SEC and the press (Shachmurove & Vulanovic, 2018). The following actions after the announcement focus mainly on ensuring the approval of the suggested deal. After an agreement between the target and the SPAC is reached, the public shareholders of the SPAC vote whether to approve the suggested merger or not (Gahng et al., 2021). Simultaneously, a separate decision is upon all public investors whether they are interested in keeping their position or if they wish to redeem their shares. The option of redemption means the right to get back the money invested and the accrued interest. Even if a decision is made to redeem one's shares, the warrants are allowed to be kept if wished and in case the merger is approved.

The process around SPACs is supported by a variety of professionals, such as private equity experts, lawyers, investment bankers and business owners (Dimitrova, 2017). The underwriters of a SPAC's IPO often act as the company's advisors on the acquisition

negotiations since they have their own interests in making the acquisition successful. The fees paid to the underwriters are partly paid only after a completed acquisition by the SPAC and thus a failure to find a proper target company results in drastically lower compensation to the underwriters. Consequently, the underwriters are subject to a similar incentive to make a deal as the managers of the SPACs are. In terms of the underwriters' own personal return, even a bad deal is better than no deal at all.

For private companies, SPACs offer a rather appealing solution for becoming a public entity (Dimitrova, 2017). The costs related to a traditional IPO are extreme and the process as a whole is lengthy. Being acquired by a SPAC allows for avoiding these disadvantages. Additionally, the large fund reserves of a SPAC and the expertise of its management team are usually highly valued by the target companies. SPACs' funds provide increased liquidity to the target companies without them having to offer their shares to the market via a traditional IPO. SPACs are listed in their own name until a merger is completed and from that time forward, they are commonly renamed after the target company and re-listed under a different ticker (Finkelstein & Cooper, 2017, p. 84).

For investors, SPACs may seem as a moderately risky investment to retain their investible funds in, due to their unique features (Finkelstein & Cooper, 2017, pp. 86–87). SPACs offer them the possibility for a continual long-term profit in case the acquisition is successfully completed. According to Berger (2008), a SPAC is both an organization and a financial instrument that has a low default risk. Finkelstein and Cooper (2017) state that if a SPAC expires and the net assets are returned to the shareholders, their investment resembles a riskless zero-coupon bond that includes an option for a future acquisition.

As in Lewellen (2009), the basic concept of a modern SPAC's lifecycle is visually presented in figure 2. A minor modification is made to figure 2 compared to Lewellen (2009): the vote on the approval of the merger and the vote on the redemption of one's shares are now separate actions.

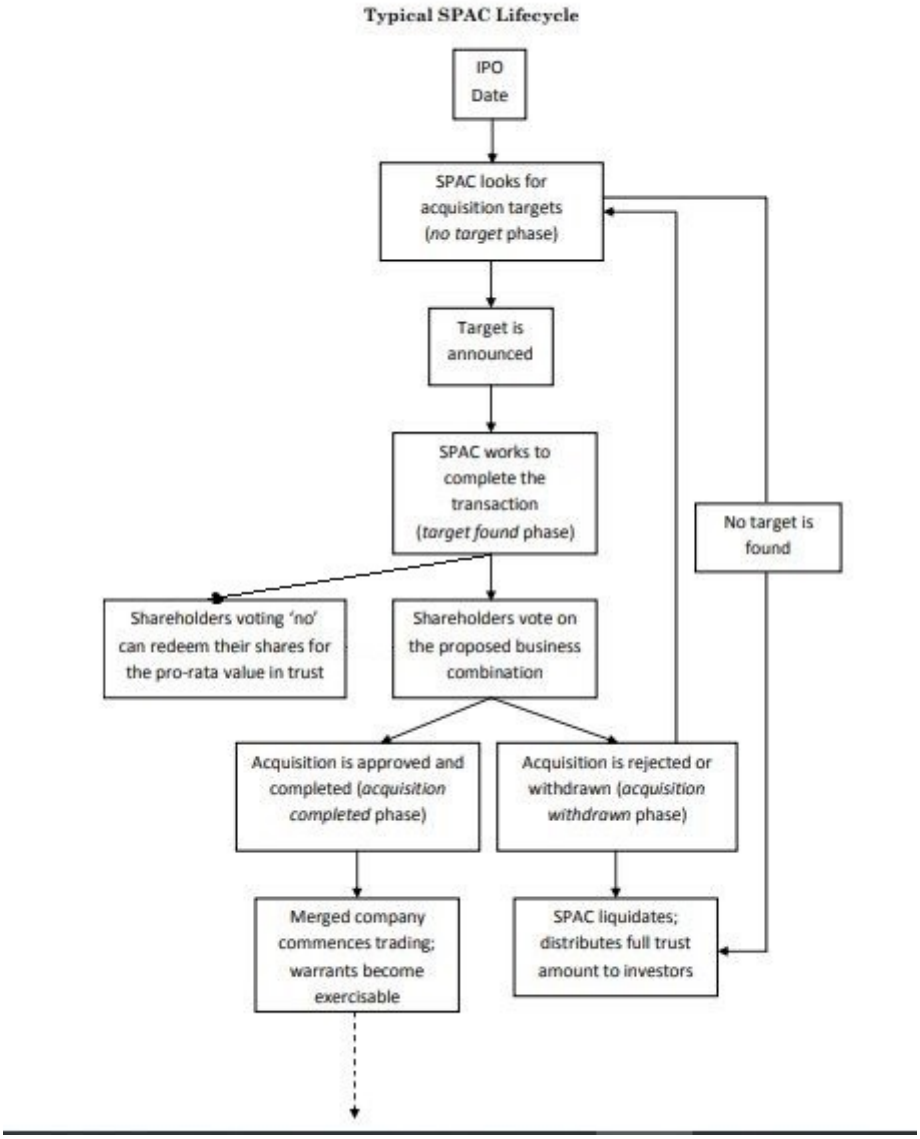


**Figure 2.** A typical SPAC lifecycle (Lewellen, 2009).

### 2.3.3 Advantages and disadvantages

The costs related to going public through a SPAC merger are twofold: direct costs to the SPAC IPO underwriters and indirect costs from dilution (Gahng et al., 2021). The dilution costs are due to shares carried by sponsors, and warrants carried by public shareholders and sponsors. As discussed earlier, a traditional IPO also involves direct and indirect costs, of which the first one is due to underwriter fees and the latter from underpricing of the

securities. Gahng et al. (2021) utilize numbers provided in Klausner et al. (2020) and discover that entering the public market via merging with a SPAC is tremendously more expensive than pursuing a traditional IPO. Although some weight shall be placed on the conservative aspects of these calculations, one must consider that the advantages may lie elsewhere.

The structure of SPACs allows for a variety of advantages for operating companies to go public via merging with a SPAC compared to conducting a traditional IPO (Gahng et al., 2021). Similar to VC funds, SPACs provide guidance and mentorship to the target companies. In fact, Hsu (2004), finds that companies are willing to offer a significant discount for VC funds that are highly reputed since they value advisory potential. Similar reasoning has been discovered in behaviours of companies that have eventually chosen to merge with a SPAC. The large amount of funds provides the target firm with great possibilities for financing future acquisitions or other investment projects. Also, the merger with a non-operating shell company allows for the target company to continue acting as an independent entity, opposite to if the merger was entered with another operating company.

SPACs faced two changes in their structure around 2010, of which the first one concerns the voting of the merger deal (Gahng et al., 2021). Previously, the vote on the deal determined the willingness to redeem one's shares but now, they have been separated. This allows for public shareholders to approve the deal even if they are not interested to keep their own position in the company. Another change concerned the sponsor purchase of warrants around the IPO of the SPAC. The number of purchases and thus, the value of the trust increased and further incentivised public shareholders to redeem their shares. Thus, the latter change in structure motivates the sponsors to offer a good merger deal, whereas the first one does not provide extra motivation. For an investor, one of the main advantages of SPACs is the limited downside risk that is provided due to the redemption option.

The time for an operating company to complete a merger with a SPAC is also significantly shorter than the time it would take to complete a traditional IPO (Gahng et al., 2021). The timeline for a SPAC merger from the perspective of an operating company is between the beginning of merger negotiations and the consummation of the deal. The negotiations can be sped up by wealthy SPAC managers as they are able to convince investors of the merits of the acquisition by investing their own funds and providing "skin in the game". In addition, they pursue in attracting PIPE (private investment in public equity) investors and reassuring an approving vote for the SPAC investors. The sponsors may also save bad deals if many investors decide to redeem their shares after all. The merger agreements require a certain minimum of cash and sponsors investing their own funds may ease meeting the requirement.

Additionally, whereas the traditional IPO process does not typically offer forecasts of future performance, the SPAC merger announcement does typically offer such estimates in order to affect the shareholder approval outcome. A SPAC merger may also offer certainty in relation to a traditional IPO (Gahng et al., 2021). The terms of the merger deal are negotiated in advance to knowing the market opinion, whereas in an IPO the terms are agreed on only after the roadshow of the upcoming IPO and thus the terms are uncertain for longer. Also, SPAC deals often include negotiations related to contingent factors such as earnout provisions of sponsors and IPO deal underwriters, which is rather rare in the field of traditional IPOs.

SPACs, like any investment vehicles, contain also some disadvantages (Cumming et al., 2014). For an investor, the decision to invest in a SPAC is based purely on the competence of the management team, since there is no operating history on which to rely expectations of future performance. However, the past experience and success of individual managers are typically not a solid indicator of what is to come. Also, the managers of a SPAC are not required a certain amount of their own time invested in the company. They often have other businesses alongside which may negatively affect the SPAC since the managers' time may not always be allocated in the most optimal manner. SPAC managers

are also strongly incentivised to complete a merger of any kind, since they are not compensated if the SPAC is eventually liquidated. Thus, a conflict of interest may occur between the activities of multiple businesses, but also between the interests of them and the shareholders. Finally, target companies may benefit from the time pressure that is set on SPACs upon the date of the IPO and this may create a competitive disadvantage during the finding process of the target company. Target companies can ask for a reasonably high price if they are aware that they do not have competition, and this is most certainly not in the interest of the shareholders of the SPAC.

## 2.4 Mergers and Acquisitions

Mergers and acquisitions (M&As) are transactions of corporate control, and they generally comprise a remarkable change in the structure of the organization (Jensen, 1988). A merger signifies a transaction in which the ownership shares of the ultimately combined company are negotiated together by multiple parties. An acquisition, however, signifies a transaction in which the purchase price of a target company is negotiated between the acquirer and the target (Cendrowski et al., 2012, p. 111). Although there is a slight difference in the definition of a merger in comparison to an acquisition, all activities restructuring corporate control are universally discussed as mergers and acquisitions. Mergers and acquisitions are primarily conducted in order to obtain synergy through the combination of two companies (Weber, 1996). They are an important part of a company's strategy since they provide inorganic growth and thus increase the company's competitiveness and maintain its viability.

### 2.4.1 Different types of M&As

Mergers and acquisitions are categorized into three main descriptive groups (Melicher & Hempel 1971). These categories are horizontal, vertical, and conglomerate, and they depend on the grounds of the merger type. Horizontal mergers occur between

companies operating as competitors of each other in the same industry. Vertical mergers, on the other hand, occur between companies from different stages of production and a merger of such is usually between a buyer and a seller. Thus, the acquirer gains control of the complete production chain and consequently, the competition among the industry may be increased (Kedia et al., 2011). Horizontal mergers generate results quite the opposite since they decrease competition by the advanced industry concentration (Pavlou, 2015). However, both horizontal and vertical mergers are likely to produce economies of scale or other operating synergies. The third merger type, a conglomerate merger, comprises mergers that occur between companies from different industries and that have no distinct connection together before the transaction. These types of mergers typically have no potential operating efficiencies that shall create value and thus, the merger is purely a financial combination of companies (W. G. Lewellen, 1971).

Another categorization distributes M&As, or takeovers, in four sections: strategic, defensive, growth and financial (Cendrowski et al., 2012, pp. 112–113). Strategic takeovers occur when a target company obtains an attractive product to which the acquirer hopes to get access. A defensive takeover signifies a transaction in which the acquirer aims at suppressing the market share of the target company and thus diminishing the power of competitors. In a growth takeover, the acquirer is typically a large and diversified company that seeks to acquire a company with a capacity for high growth. The fourth type, a financial takeover covers an acquisition in which the acquiring company is looking for the desired target by only exploring their financial statements.

### 2.4.2 Theory of M&A value creation

There is a wide range of theories that explain the value creation, or value depreciation, resulting from an M&A transaction. The incentives behind every transaction are diverse and the topic has also been studied broadly throughout the years. It is widely recognized that M&As of listed companies destroy shareholder value more frequently than create it (Alexandridis et al., 2017). This finding can be found rather dazzling since the M&As of

listed companies are under proper inspection by the public and especially the shareholders and the challenges related have been broadly recorded and considered in advance.

The efficiency theory explains the value-creating effects of an M&A transaction, as it indicates a planned action of obtaining synergies (Trautwein, 1990). The potential synergies are often categorized as operational, managerial and financial synergies. Operational synergies may be obtained by combining at least two priorly separate companies or exchanging knowledge among the two. Managerial synergies are obtained when the new management team of a newly combined entity creates superior returns. Financial synergies are achieved by M&A when the company is offered lower costs of capital due to either increasing the company's size or decreasing its systematic risk by the expansion of its investment portfolio. Additionally, financial synergies can be obtained if a company combines with an internal capital market since then the capital allocation can be done more efficiently. The main conclusion regarding the efficiency theory, provided by existing literature is that although the stock market generally values M&As positively, the effect cannot be seen in the companies' real performance. Thus, if the stock market shall be seen as efficient, the theory may be supported but otherwise, it does not hold up.

Another theory that describes the value-creating effects is the synergy theory, which suggests that two entities combined result in greater than their sum (Kitching, 1967). Among all industries, the production industry seems to have the most potential regarding the synergy theory since its operations can be combined and made more efficient. Also, the purchasing power and economies of scale increase in case of a merger. Technology and marketing are other areas in which the synergy benefits are high. Additionally, compared to the different types, financial mergers have shown to provide the most synergy benefits.

Value destruction of M&As is explained partly by the hubris theory (Roll, 1986). The theory describes the common overconfidence of managers during an M&A process. The valuations of target companies, made by the acquiring companies' managers, are

typically overvalued since the estimations of potential synergies are set too high as a result of excessive confidence. Consequently, the acquiring company often overpays in relation to the benefits obtained.

Another theory implying a value decrease due to M&A transactions is the empire-building theory (Trautwein, 1990). It suggests that the motivation behind planning and conducting a merger lies in the managers' personal interests. The claim is that managers aim at maximizing their benefits, whether it is financial or a boost to their careers or something else. These types of M&As tend to destroy shareholder value since the incentives of the management are not aligned with those of shareholders. The last theory discussed is the size theory, which states that companies usually do not acquire companies that are larger in size compared to them (Gorton et al., 2009). Thus, the larger target companies are usually left with less interest among potential acquirors. In the case of larger M&A transactions, the organization of such often requires more effort and funds and thus it has a higher risk of being unsuccessful and destroying shareholder value.

The creation or depreciation of value for a publicly listed acquiror is typically measured by examining the stock price changes around the transaction (Evans & Mellen, 2018). It presents the stockholders' expectations and beliefs of the company’s future performance. Based on stock price movements, it is rather easy to determine when a deal is successful and when it is not. If any abnormal positive returns are gained, the deal may be declared as a success and vice versa. Other measuring methodologies also occur. For example, a managerial rating method and an accounting information-based method. However, since this thesis utilizes the tracking of stock prices, other methods are not further discussed.

# 3 Literature review

Boyer and Baigent (2008) provide the first empirical research concerning SPACs market performance. They examine 87 SPACs from the period 2003 to 2006 and their analysis shows that SPACs offer a cost-effective and rapid way of public financing for private companies. The effect is emphasized during times of low IPO activity. They motivate the importance of SPACs as an investment tool by three special features involved with them. First, SPACs grant the public with access to private equity investments which have been traditionally limited to mainly institutional investors. Second, SPACs provide additional transparency in comparison to private equity investments because of reporting requirements made by the Securities and Exchange Commission (SEC). Third, investors must bear only a limited risk since the proceeds of the IPO are held in a trust and returned in case the acquisition is not completed in time.

Berger (2008) examines SPACs for the period 2003 to 2007 and he claims that SPACs mitigate various problems related to the IPO market and provide private companies with elements that are not available in traditional IPOs. He describes that the view on SPACs has changed from a way to go public in bad market conditions to an alternative to traditional IPOs to go public in both bull and bear markets. Through three case studies of complete mergers, Berger finds that SPACs provide the most benefit to companies whose situation is complicated rather than straightforward. This finding is due to SPACs' availability to cash and therefore optimal capital structure, providing valuation benchmarks, and offering exit opportunities for private companies that are not of interest to strategic buyers.

Floros and Sapp (2011) compare the market performance of SPAC securities to the performance of ones regarding traditional reverse mergers. A sample of 111 SPACs is gathered over the period 2006–2008, and the results show that a significant and negative return occurs after the acquisition. In comparison to usual reverse mergers, SPACs' performance is worse, and their investors lose the remarkable upside potential of merger returns over the process of protecting themselves from the downside risk. Floros and

Sapp (2011) find that in the period right after the IPO and before a target company is announced, the cumulative abnormal return (CAR) is insignificant and constant. After the target company is announced, yet the acquisition is still incomplete, the CAR is significantly positive. However, after the acquisition is completed, the CAR is again negative and also statistically significant, both for short-term and long-term event windows. This finding may be due to managerial incentives to close a deal at all costs, even when the shareholders shall face a destroyed share value. The found positive and significant CAR of a withdrawn acquisition provides support to the claim that some deals are likely to be value-destroying to the shareholders and thus a withdrawal is seen as a good event.

Lakicevic and Vulanovic (2013) study the performance of three different types of securities SPACs issue during the IPO. Units, common stocks, and warrants are analyzed simultaneously by a sample of 161 SPACs over the time period of 2003–2009. The results show that in general, acquisition announcements cause positive returns, and they provide the largest effect for warrant holders and the mildest for common stockholders. The acquisitions themselves cause negative returns for common stockholders but, contrary to earlier studies, positive returns are found for warrant and unit holders. However, this finding could be due to the very limited size of a sample concerning completed acquisitions and warrant or unit holders. In addition, through a subsample of 66 SPACs that completed the acquisition, the buy-and-hold return to unit holders is found to be significant and -28%.

Dimitrova (2017) studies the post-IPO performance of SPACs and the effects on the performance caused by incentives raised from contractual features. The sample period is 2004–2010 and the sample consists of 73 SPACs acquiring companies from overall 31 different industries. She finds that on average, SPACs' long-term stock abnormal returns are negative and SPAC acquisitions destroy shareholder value. The four-year post-IPO buy-and-hold return is -51,9%. As suggested in Floros and Sapp (2011), evidence is found that a major part of the decreased value is a result of contractual features that provide SPAC managers with incentives to complete the acquisition at any cost. Dimitrova (2017)

also provides findings that the accounting performance of SPACs is poor in comparison to their benchmarks.

Ignatyeva et al. (2013) are the first to provide a study on the structure and performance of SPACs in European capital markets. A sample of 19 SPACs is collected from the period 2005 to 2011. European SPACs are found to be partially different compared to U.S. SPACs and despite being listed on European stock exchanges, they do not show focus on Europe regarding target companies, investors, and actual merger locations. The results show wide variation in the characteristics and performance of the target companies, and the ultimate stock performance of SPACs is to some extent a consequence of the target company's performance.

Rodrigues and Stegemoller (2014) examine the differences in SPAC IPOs and regular company IPOs regarding underwriting characteristics and acquirer acquisition announcement returns. The results imply that the average returns around acquisition announcements are triple the size for SPACs compared to regular companies. A positive relationship is found between the returns and both managerial ownership and time until termination of the SPAC. No significant relationship is found between the returns and acquirer size or method of payment.

Shachmurove and Vulanovic (2015) study SPACs that are aiming at acquiring private companies in the shipping industry. They study the characteristics and performance of these specific SPACs over the period 2004–2013 and find that although the characteristics of these SPACs are mostly similar to the rest of the U.S. based SPACs, they perform better in comparison. Furthermore, the shipping SPACs provide relatively higher returns for their founders, which may cause conflicts of interest between the managers and investors of the SPACs.

Kolb and Tykvová (2016) examine the long-term performance of private companies acquired by SPACs and compare them to regular IPO companies. The study is conducted

within a sample period 2003–2015 and it consists of 236 SPAC IPOs and 130 SPAC acquisitions. They find supporting evidence to previous research on SPAC acquisitions. By tracking the value effects of acquisitions up to 60 months past the SPAC acquisition, the results show that acquired companies experience severe underperformance compared to regular IPO companies as well as the market, industry, and firms the similar size and with similar book-to-market ratios. It is found that SPAC acquisitions provide private companies with an opportunity to seek funding and go public in difficult times when a traditional IPO is not a realistic option. However, companies that choose the SPAC route are on average more highly levered and smaller than IPO companies, have lower growth opportunities, and are less likely to obtain funds from venture capitalists or private equity funds.

Vulanovic (2017) examines the impact of institutional characteristics on the post-merger survival of 105 SPACs for the period 2003–2013. The findings imply that these characteristics are important in terms of the outcome after the merger. The survival likelihood is increased by primary positive market performance and commitment by the stakeholders of the SPAC before the merger occurs, while higher transaction costs and foreign company-focus increase the possibility of the SPACs failure. Furthermore, SPACs show a significant negative post-merger buy-and-hold performance of -40%. As in earlier studies, this finding could suggest that SPACs may involve conflicting incentives between different stakeholders.

Bodewes (2021) studies the short- and long-term value effects of merger plan announcements for SPACs in the U.S. for the period 2010 to 2021 Q1. The impact is measured with cumulative abnormal returns and buy-and-hold abnormal returns utilizing the market-adjusted model. Similar to numerous earlier studies (Dimitrova, 2017; Kolb & Tykvova, 2016; Klausner et al. 2020), the Russell 2000 index is used as the benchmark index. Bodewes finds supporting evidence to earlier research by showing strong statistical evidence that around merger plan announcements, the CARs are positive for SPACs. However, the findings show that the magnitude is much higher, being 9,00% for the three-

day event window. This is most definitely caused by the sample including both pre- and post-COVID SPACs of which the latter are not represented in earlier research. Bodewes finds that post-COVID SPACs experience 10,50% higher CARs than pre-COVID SPACs. Post-covid SPACs are explained to react differently due to the market conditions: high volatility and low interest rates. The long-term effect is found to be positive up until 15 months after the announcement of merger plans and afterwards become value-destroying.

Klausner et al. (2020) study the structure and costs of SPACs between January 2019 and June 2021 and discuss whether SPACs are a better way of taking a private company public than a traditional IPO. They find that SPACs bear way higher costs than an IPO, but the costs are laid on external shareholders and thus from the perspective of a private target company, a SPAC may be a cheaper route than an IPO. However, the findings imply that for external shareholders, SPACs are overall value-destroying due to heavy post-merger losses. Simultaneously, also SPAC sponsors are gaining significant profits.

Gahng et al. (2021) study SPACs between January 2010 and October 2020 from the perspective of investors, operating private companies, and sponsors, as well as discussing SPACs' evolution and structure. They find that before a merger or a liquidation occurs, an external investor has earned on average a 9,3% annualized return. However, the returns for the period beginning from a merger are found to be negative for common stock holders but still positive for warrant holders. The equally-weighted average annual return for common stock holders is -15.6% but on a dollar-weighted basis it is -4,0%. Overall, the findings support earlier research by stating that the first period is value-creating for an investor and the second is value-destroying.

# 4 Data and methodology

This chapter describes the selection of data and presents the empirical design.

## 4.1 Data description

The data consists of SPACs issued in the U.S. market during the time period between January 2014 to June 2021. The focus is on this particular time period since the structure of SPACs was changed in the early 2010s and the existing literature provides rather limited evidence regarding SPACs in this new era.

Four different datasets are gathered: SPAC IPOs, SPACs that announce a merger, SPACs that consummate a merger, and SPACs that withdraw the merger announcement. The data is collected from the Refinitiv database and SPACs are determined by a few variables. SPACs are under the definition “Blank checks” which is equivalent to the SIC code of 6770. The IPO date, the date of a merger announcement, the date of a merger being effective, and the date of a withdrawal are limited to the timeline of 1.1.2014-30.6.2021. The acquiror nation is set as the USA. The dates of withdrawal announcements of prior merger plans are hand-collected by searching for each announcement individually. The dates are derived both from public SEC filings and comprehensive press announcements.

Further limitations are yet required to exclude any other than SPAC transactions from the samples. The acquiror SIC industry is ‘holdings and other investment offices’ and the TRBC industry is ‘investment trusts’. Acquiror public status is defined as public, its macro industry is financials and mid industry is alternative financial investments. Acquiror primary SIC is set as ‘Unit Investment Trusts, Face-Amount Certificate Offices, and Closed-End Management Investment Offices’ and the form of the deal is limited to merger, acquisition of assets or acquisition of majority interest. Acquisitions of partial interest are excluded from this study. Mergers with public target companies are also excluded due to the theoretical implications of a typical SPAC. Additionally, similarly to Gahng (2021),

SPACs traded in the OTC markets are excluded from the data considering potential indistinct differences in comparison to exchange-traded SPACs. Also, the prices presented may be out of date and thus, not comparable.

To examine the value effects of acquisition announcements and completed and rejected acquisitions, also stock price data of the SPACs is included, and it is gathered from the Refinitiv database as well. More specifically, data obtained is daily closing prices. Since SPACs typically change their name and their ticker symbol at the time of the acquisition, the new names and symbols must be gathered in order to obtain stock price data for the time following a completed merger. For those SPACs that consummate a merger, the new information must be gathered manually since there is no database available from which this information could be collected from. Following previous literature (Boyer & Baigent, 2008; Lakicevic et al., 2014), the chosen benchmark to which the stock price returns are compared to, is the Russell 2000 index. The data for the Russell 2000 index is collected from Yahoo Finance.

Over the time period chosen, up to 688 SPACs have become publicly listed. An announcement of a merger was made by 356 SPACs and a completed merger was reached by 183 SPACs. Only 26 SPACs announced a withdrawal of a prior merger plan during the time period. The remaining SPACs are either in the middle of the process of finding a target or were eventually dissolved and the funds released back to the public shareholders.

The spread of transaction volumes is shown in table 1.

**Table 1.** Number of SPAC transactions separated by year.

| Year | IPOs | Merger announcements | Merger completions | Merger withdrawals |
|---|---|---|---|---|
| 2014 | 9 | 8 | 3 | 1 |
| 2015 | 17 | 4 | 6 | 2 |
| 2016 | 10 | 12 | 6 | 2 |
| 2017 | 31 | 23 | 11 | 5 |
| 2018 | 36 | 28 | 16 | 6 |
| 2019 | 51 | 29 | 24 | 4 |
| 2020 | 219 | 98 | 53 | 4 |
| 2021(Q1-Q2) | 315 | 154 | 64 | 2 |
| Total | 688 | 356 | 183 | 26 |

All SPAC merger plan announcements are included in the empirical design regarding the first hypothesis, no matter whether they are eventually successfully completed, still in the middle of the process or withdrawn. This way, the results are less exposed to selection and survivorship biases than if the focus was only on successful completed deals. The data does however pose some limitations to the research. The SPACs that do not announce a merger are completely excluded since there is no available data for liquidated SPACs and no further consideration of the biases is possible. Fortunately, as Chauviere and Tan (2020) state, the significance of the potential biases remains small since only around 10% of SPACs were liquidated at least between 2015 and 2020. Additionally, the findings would provide more insights if data availability was better and unit, warrant and common stock price information could be separated.

The two events that are under research are defined separately. The announcement date is a date on which one or more parties involved in the transaction makes the first public disclosure of common or unilateral intent to pursue the transaction. The effective date is a date on which the deal was completed and therefore corresponds with the day before the stock begins trading on the stock exchange under the name of the newly combined entity.

Table 2 provides descriptive statistics regarding the gross proceeds of the SPAC IPOs, and the values of the SPACs' M&A transactions and announcements over the research time period.

**Table 2.** SPAC transaction value statistics.

| *(in millions)* | *IPO gross proceeds* | *Announcement deal value* | *Effective deal value* | *Withdrawn deal value* |
|---|---|---|---|---|
| Minimum | 39.00 | 10.00 | 10.00 | 60.00 |
| Maximum | 4000.00 | 34260.00 | 16237.43 | 841.70 |
| Mean | 301.72 | 1628.47 | 1328.21 | 360.33 |
| Median | 250.00 | 972.00 | 882.50 | 341.11 |
| Standard Error | 9.50 | 147.98 | 128.66 | 52.22 |
| Standard Deviation | 249.22 | 2684.15 | 1711.74 | 227.60 |
| Kurtosis | 77.04 | 72.27 | 33.12 | -0.40 |
| Skewness | 6.47 | 7.07 | 4.60 | 0.59 |
| Count | 688 | 329 | 177 | 19 |

## 4.2 Methodology

In this thesis, the empirical research will be conducted by using the event study methodology. Fama et al. (1969) first introduce the methodology as they study how stock prices adjust to new information in relation to a stock split. The study assures that markets are efficient and all available information is reflected in stock prices shortly after its spread. The efficient market hypothesis is a principal assumption behind all event studies. The issue is additionally studied in MacKinlay (1997), which also suggests that an event study captures the impact of a certain event on the firm market valuation. Thus, the methodology is suitable for the purpose of this thesis.

The efficient market theory suggests that there are three forms of efficiency conditional on how strongly they affect stock prices (Brealey et al., 2020). Weak market efficiency describes circumstances when stock prices reflect past information, and semi-strong efficiency concerns circumstances when stock prices reflect past and present information where stock prices react immediately to announced news. The strongest form, strong

market efficiency refers to a situation in which security prices reflect past, present public and present private information. This way, this private information is acknowledged in the security price and thus no one could in theory benefit from such information.

The events of interest for this research are the SPAC's acquisition announcement and the acquisition completion. After the events of interest are chosen, the following step involves defining the time period on which the price changes are looked upon. This time period is called an event window. According to MacKinlay (1997), it is crucial to add at least one day before and after the event day to the window in order to catch the effect of the event. The chosen event windows used for the examination of abnormal returns in this thesis are [-1, 1], [-5, 5], and [-10, 10]. Zero signifies the day of the event. The multiple different event date windows are used as a kind of robustness test. The calculations included are the rate of returns, abnormal returns (AR), cumulative abnormal returns (CAR), average abnormal returns (AAR), and cumulative average abnormal returns (CAAR).

The calculations are computed as in MacKinlay (1997). The rate of returns for the SPAC securities and the benchmark index are calculated as the following equation shows:

$$R_{it} = \frac{V_t - V_{t-1}}{V_{t-1}} , \quad (1)$$

where $R_{it}$ is the percentage rate of return for security i at day t, $V_t$ is the value of the security at day t, and $V_{t-1}$ is the value of the security at day t-1. The values are obtained as closing price values throughout the empirical design.

After collecting the realized rate of returns of both the SPAC security and the benchmark index, the abnormal returns can be calculated. MacKinlay (1997) suggests using the market-adjusted return model in situations where data availability is limited, such as SPACs' non-existent history of operations prior to merger and thus also to some extent irrelevant stock prices. Previous research (Jenkinson & Sousa, 2011) among SPACs also

supports the choice of the market-adjusted model. The equation is simply a subtraction between individual security returns and benchmark index returns:

$$AR_{it} = R_{it} - R_{mt} \ , \tag{2}$$

where $AR_{it}$ is the estimation of an abnormal return for security i at day t, $R_{it}$ is the realized return for stock i at day t, and $R_{mt}$ is the realized return of the reference marker i at day t. As stated earlier, the reference market is estimated from the benchmark index Russell 2000.

Average abnormal returns are calculated next by the following equation:

$$AAR_t = \frac{1}{n}\sum_{i=1}^{n} AR_{it} \ , \tag{3}$$

where $AAR_t$ is the average abnormal return of the events of the sample, n is the number of events in the sample and $AR_{it}$ is the abnormal returns.

The next step is to calculate the continuity of the obtained abnormal returns by calculating the cumulative abnormal returns (CAR):

$$CAR_i(\tau_1, \tau_2) = \sum_{\tau=\tau_1}^{\tau_2} AR_{i\tau} \ , \tag{4}$$

where $CAR_i$ is the cumulative abnormal return for security i and ($\tau_1$,$\tau_2$) represents the event window.

The final calculations concern the cumulative average abnormal returns (CAAR) which are calculated by the following equation:

$$CAAR_i(\tau_1, \tau_2) = \sum_{\tau=\tau_1}^{\tau_2} AAR_{i\tau} \ . \tag{5}$$

The equation is almost identical to equation 4, the only difference being the consideration of average abnormal returns instead of abnormal returns.

In order to test for the statistical significance of the results, the final step includes applying a t-test for the cumulative average abnormal returns for all event windows. The equation for a cross-sectional t-test is the following:

$$t_{CAAR} = \sqrt{n}\frac{CAAR}{S_{CAAR}} \ , \tag{6}$$

where $t_{CAAR}$ is the value for t, and $s_{CAAR}$ is the standard deviation of the cumulative average abnormal returns. $S_{CAAR}$ is defined by an equation as:

$$S^2_{CAAR} = \frac{1}{N-1}\sum_{i=1}^{n}(CAR_i - CAAR)^2 \ . \tag{7}$$

# 5 Empirical results

This chapter presents the empirical results of the analysis regarding the two hypotheses, alongside with discussion of the possible implications.

## 5.1 M&A announcement

Overall, 356 SPACs announced merger plans during the chosen time period for this study, of which complete stock price information is available for 317. As mentioned earlier, the abnormal returns are studied in three different time windows, [-10,10], [-5,5], and [-1,1], in order to catch the essence of any short-term effects. Table 3 presents the statistics of the sample regarding realized cumulative abnormal returns for all three event windows.

**Table 3.** Cumulative abnormal returns for event windows [-10,10], [-5,5], and [-1,1] around M&A announcement dates.

| | [-10,10] | [-5,5] | [-1,1] |
|---|---|---|---|
| Mean | 0.0871 | 0.0948 | 0.0814 |
| Standard error | 0.0143 | 0.0146 | 0.0115 |
| Median | 0.0172 | 0.0172 | 0.0210 |
| Standard deviation | 0.2551 | 0.2592 | 0.2053 |
| Min | -0.2842 | -0.3447 | -0.4526 |
| Max | 2.1204 | 1.7905 | 1.2573 |
| Kurtosis | 17.3794 | 13.0352 | 10.6962 |
| Skewness | 3.3929 | 3.1639 | 2.9147 |
| N | 317 | 317 | 317 |
| t-value | 6.08 | 6.19 | 7.08 |

Table 3 shows the results related to the first hypothesis, which states that the announcement of M&A plans results in positive cumulative abnormal returns in the short-term. The average CARs are 8.71%, 9.48%, and 8.14% for the three event windows presented concerning the events of M&A announcements and the results are significant at 1% level regarding all three event windows. Thus, the null hypothesis is rejected, and the first

hypothesis is accepted. The results are aligned with hypothesis number one suggesting that SPAC merger announcements are positively interpreted by the market. For all event windows, the CARs are evidently positive and the highest for the window five days before and after the actual announcement date. However, as can be observed, the distribution of the data is non-symmetric. Skewness is significantly over zero for all three event windows and therefore another important central measure for the cumulative abnormal returns is the median. The median CARs are also positive, being 1.72%, 1.72%, and 2.10%, the highest value concerning the shortest event window. The distribution of CARs across all companies in the sample is demonstrated in figures 3, 4 and 5 separately for the three event windows. The CARs are ranked from the lowest to highest in the figures to better demonstrate the spread.

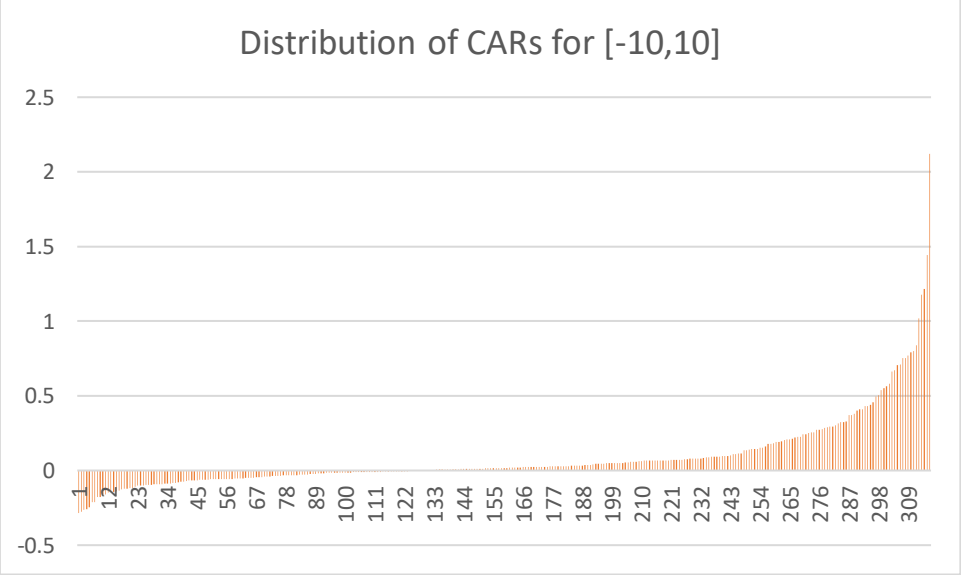


**Figure 3.** The distribution of CARs for the event window [-10,10] around announcement dates of M&A plans.

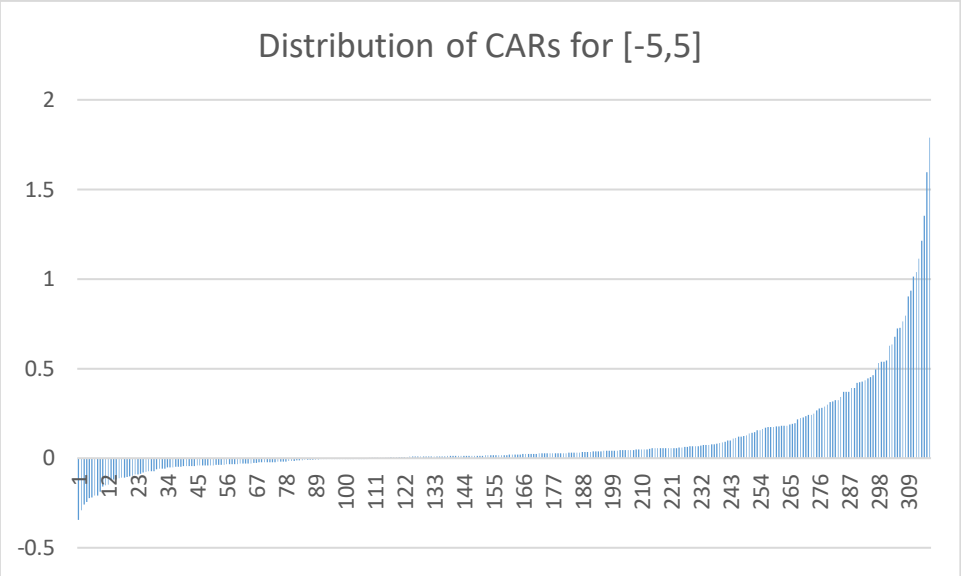


**Figure 4.** The distribution of CARs for the event window [-5,5] around announcement dates of M&A plans.

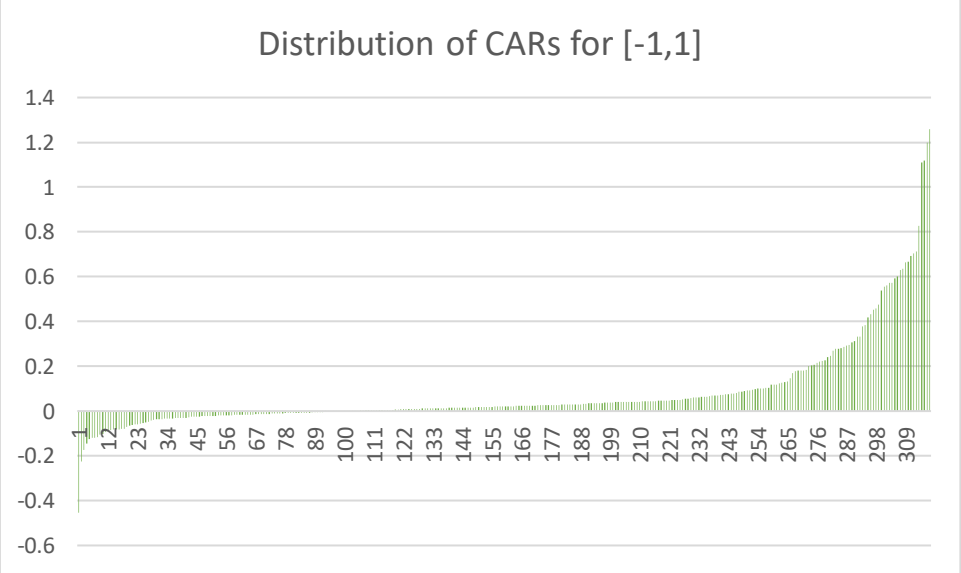


**Figure 5.** The distribution of CARs for the event window [-1,1] around announcement dates of M&A plans.

The figures show visually how the most typical reaction to the news of a found target company is positive and the cumulative abnormal returns are the highest when the event window under research is the shortest. Next, the AARs and CAARs are presented in figures 6, 7, and 8 separately for all three event windows.

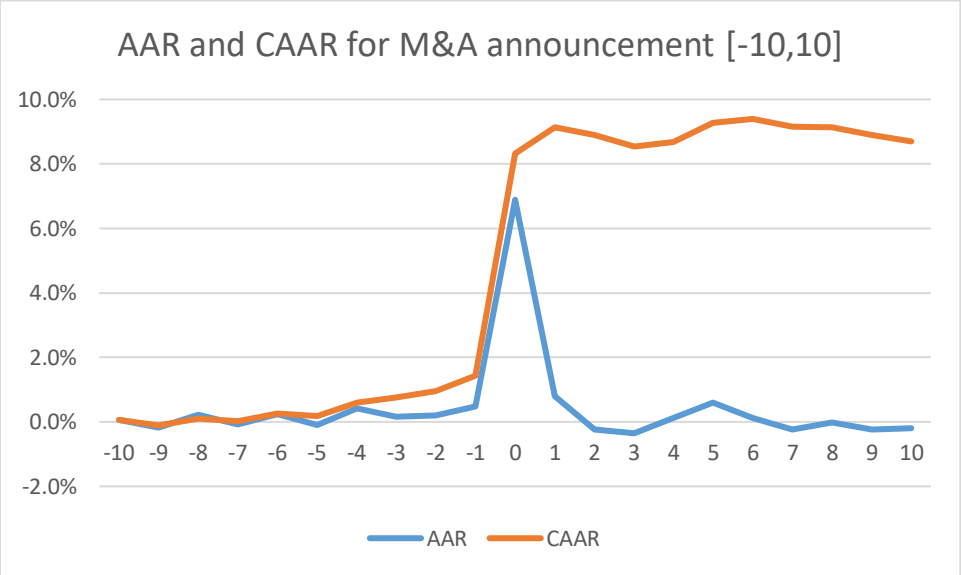


**Figure 6.** Average abnormal returns and cumulative average abnormal returns for the event window [-10,10] around M&A announcements.

Figure 6 shows the average abnormal returns and cumulative average abnormal returns for the event window [-10,10] around SPACs' announcements of a found target company and merger plan. On the final day, day 10, the AAR is -0,02% and CAAR is 8,71%. A visible positive spike occurs right around the event day, but it quickly settles. After the event date, the abnormal returns settle back to the normal level which indicates that no over-reaction occurs. Overall, the impact of a merger plan announcement is positive and shareholder value-enhancing.

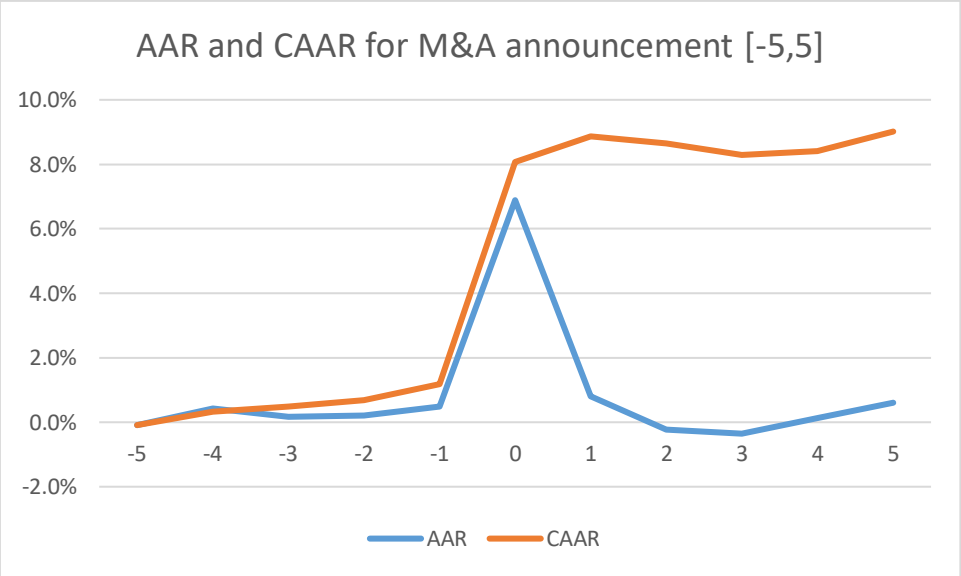


**Figure 7.** Average abnormal returns and cumulative average abnormal returns for the event window [-5,5] around M&A announcements.

Figure 7 shows the average abnormal returns and cumulative average abnormal returns around SPACs' announcements of merger plans with a found target company, for the event window [-5,5]. A similar spike around the event date is seen as in figure 6 regarding the longer event window. At the final day, AAR is 0,60% and CAAR is 9,02%. The news is considered positive and the impact of this type of an announcement is positive and value-creating regarding the event window [-5,5].

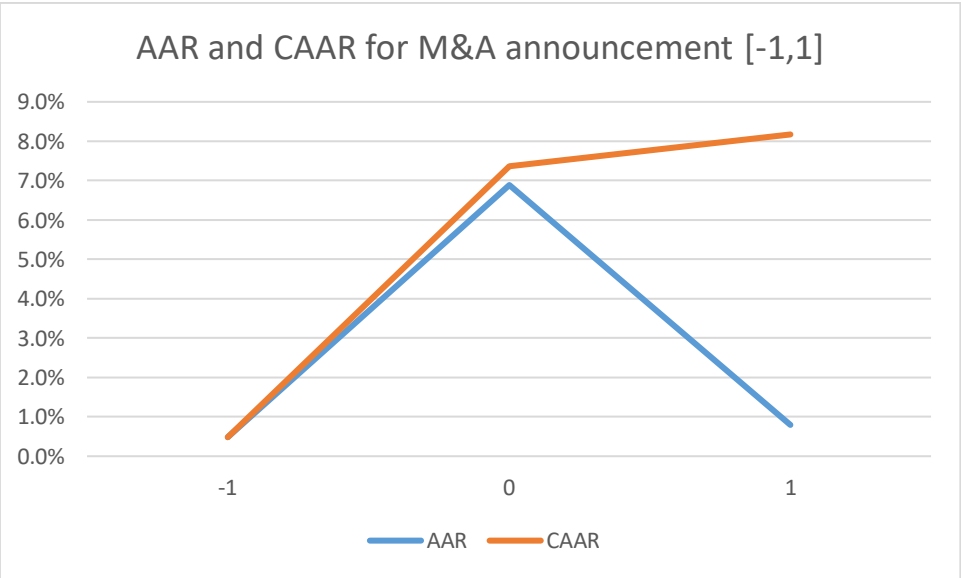

**Figure 8.** Average abnormal returns and cumulative average abnormal returns for the event window [-1,1] around M&A announcements.

Finally, figure 8 presents average abnormal returns and cumulative average abnormal returns for the shortest event window [-1,1]. Similar to the longer event windows, also the shortest shows a visible positive spike around the event date. On the final day, AAR is 0,80% and CAAR is 8,17% and so the impact of an M&A announcement by a SPAC is evidently positive even for such a short time frame.

The findings complement earlier empirical studies, although presenting values remarkably higher than mostly discovered. The previous research mostly shows CARs between 2% to 5% (Lakicevic & Vulanovic, 2013; Kolb & Tykvova, 2016; Rodrigues & Stegemoller, 2014; Lewellen, 2009), however, a more recent study (Bodewes, 2021) finds CARs around 9%. The findings in this thesis correspond strongly to those of Bodewes (2021), as discovered CARs range from around 8% to 9% for all three short-term event windows. This difference between recent findings and those some years back can be explained by the sizable amount of post-COVID announcements in the newer study samples. This implies that overall, the short-term performance of SPACs is highly dependent on the particular time period under research. In fact, Bodewes (2021) finds that post-COVID CARs for merger announcements are 10,5% higher than for pre-COVID merger announcements. Post-COVID SPACs experience higher market volatility, lower cost of debt and as a result a higher attraction from investors, causing differing SPAC characteristics in relation to the pre-COVID era.

## 5.2 M&A completion

Out of 183 completed mergers and acquisitions during the research time period, complete stock price data is available for 168 SPACs. All three event windows are studied also for this event date to find any possible abnormal returns. Table 4 shows the sample data regarding realized cumulative abnormal returns.

**Table 4.** Cumulative abnormal returns for event windows [-10,10], [-5,5], and [-1,1] around M&A completion dates.

| | [-10,10] | [-5,5] | [-1,1] |
|---|---|---|---|
| Mean | -0.0539 | -0.0592 | -0.0057 |
| Standard error | 0.0215 | 0.0204 | 0.0132 |
| Median | -0.0544 | -0.0437 | 0.0068 |
| Standard deviation | 0.2783 | 0.2645 | 0.1705 |
| Min | -1.1786 | -1.5473 | -0.7346 |
| Max | 1.2365 | 1.1441 | 1.0135 |
| Kurtosis | 4.9892 | 8.9175 | 11.1811 |
| Skewness | -0.1283 | -0.7481 | -0.0165 |
| N | 168 | 168 | 168 |
| t-value | 1.22 | 1.68 | 0.25 |

Table 4 presents the results related to the second hypothesis of this thesis, which states that M&A completions on average destroy shareholder value in a short-term window. In other words, the assumption is that short-term cumulative abnormal returns are negative. The obtained results show that the mean is negative for all three event windows, the exact values being -5,39%, -5,92%, and -0,57% from longest to shortest. However, the results are statistically significant only for the event window [-5,5], at 10% significance level. The lack of statistical significance for the other two time windows can be partially explained by the size of the sample. Overall, the results and visual demonstrations do however imply a substantial reaction around the M&A completion dates. Additionally, since the statistical significance is nearly accepted also for the event window [-10,10], and is accepted for [-5,5], the conclusion is that the null hypothesis is rejected.

Similar to the event of an announcement, the CARs are not normally distributed and therefore another useful central measure is median. The median for event window [-10,10] is -5,44%, for event window [-5,5] it is -4,37%, and for the shortest event window [-1,1] it is 0,68%. Negative median CARs are thus found only for the two longest event windows and the shortest, in total three-day long event window demonstrates a positive reaction to a merger consummation. The distribution of CARs across all companies in the sample is demonstrated in figures 9, 10 and 11 separately for the three event windows.

The CARs are ranked from the lowest to highest in the figures to better demonstrate the spread.

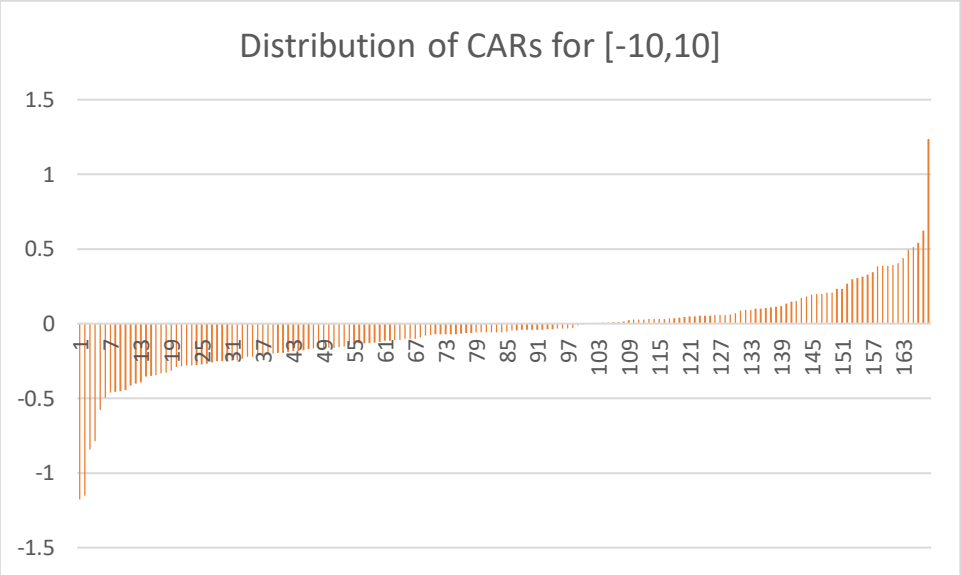


**Figure 9.** The distribution of CARs for the event window [-10,10] around M&A completion dates.

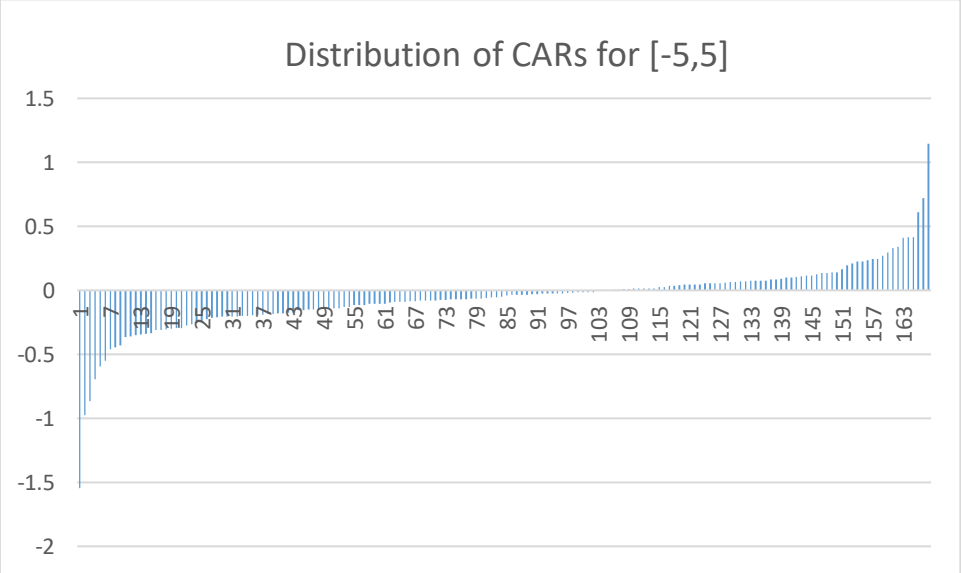


**Figure 10.** The distribution of CARs for the event window [-5,5] around M&A completion dates.

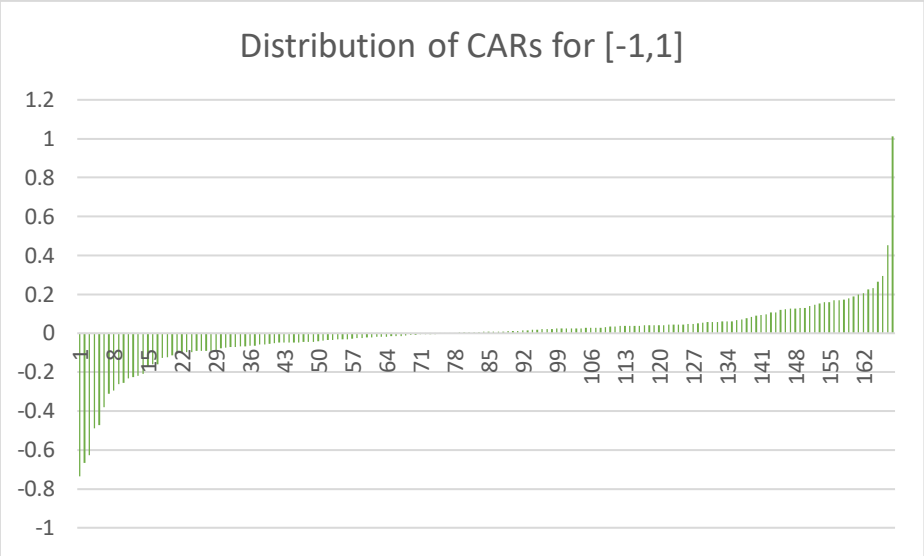


**Figure 11.** The distribution of CARs for the event window [-1,1] around M&A completion dates.

Figures 9, 10, and 11 provide a visual demonstration of the CAR spread among all SPACs in the sample. The spread is similar for all three event windows, and only minor differences can be found. Both negative and positive CARs are of notable quantity. However, the negative values are more significantly different from zero than the positive values. Next, the AARs and CAARs are obtained for the event window [-10,10] and presented in figure 12.

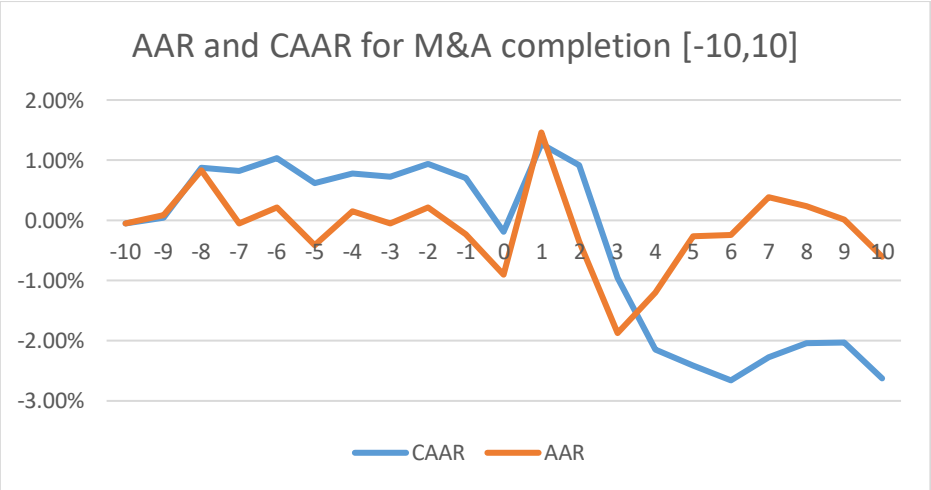


**Figure 12.** Average abnormal return and cumulative average abnormal return for the event window [-10,10] around the M&A completion.

Figure 12 demonstrates the average abnormal returns and the cumulative average abnormal returns around the M&A completion dates for the longest event window under research. As discussed regarding CARs, the overall reaction is value-destroying for the external shareholders. Shortly after the event date, there can be seen a positive spike in the graph, but the further development is generally negative and thus, align with hypothesis number two and numerous previous studies. On day 10, the average abnormal return is -0,60% and the cumulative average abnormal return is -2,63%. Therefore, for the event window [-10,10] the effect of a completed M&A for a SPAC is negative and the event destroys shareholder value in such a short-term window. Next, a similar graph in figure 13 demonstrates the AARs and CAARs for the event window [-5,5].

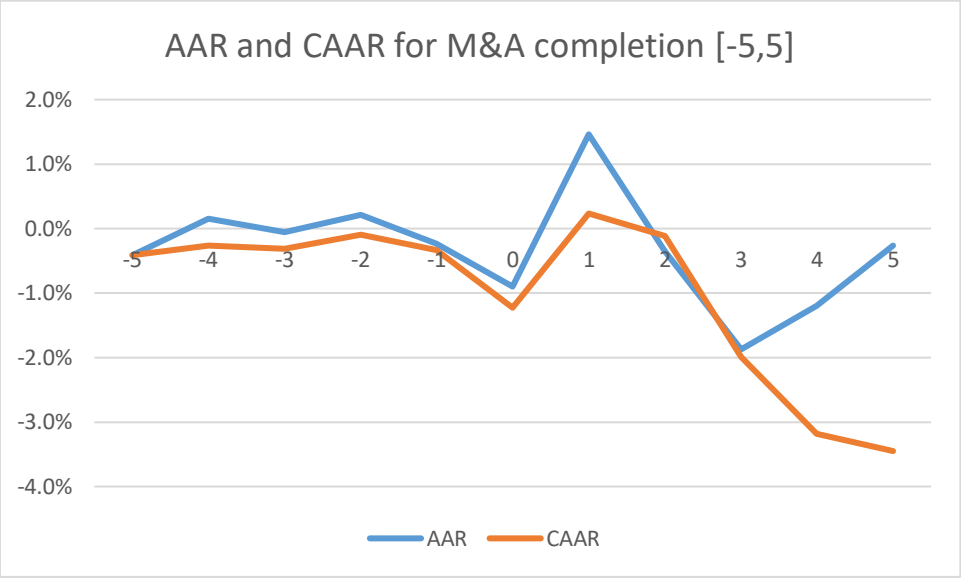


**Figure 13.** Average abnormal returns and cumulative average abnormal returns for the event window [-5,5] around the M&A completion.

Figure 13 shows the expected results. CAAR is -3,45% on the last day of the event window and AAR is -0,26%, respectively. The impact of SPACs' M&A completion is negative and value-destroying for external shareholders also for the time window of [-5,5]. Finally, figure 14 presents the results of AAR and CAAR for the shortest event window, [-1,1].

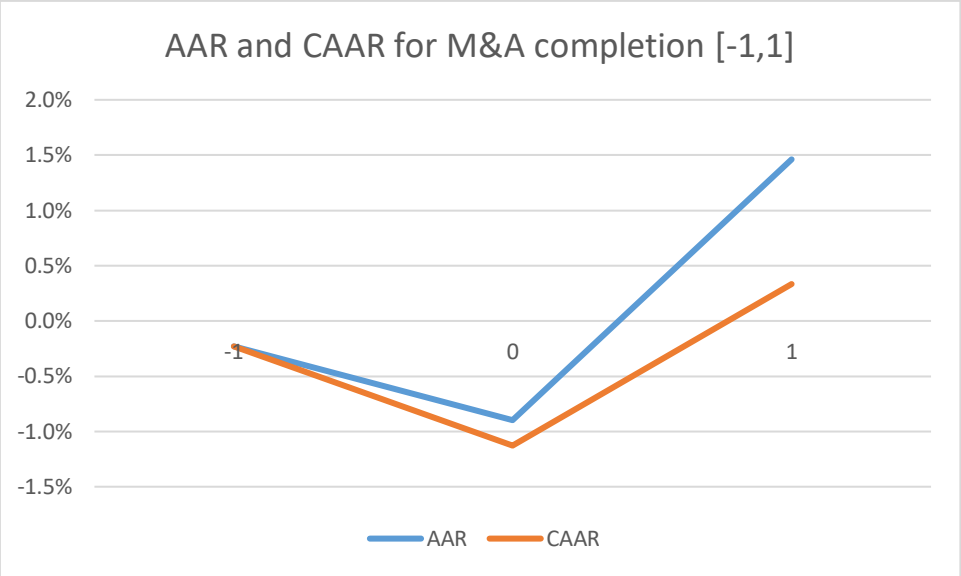


**Figure 14.** Average abnormal returns and cumulative average abnormal returns for the event window [-1,1] around the M&A completion.

Figure 14 presents results for the shortest event window [-1,1]. Contrary to the initial assumption, the impact of a completed M&A transaction is positive. CAAR is 0,33% on the last day and AAR is similarly 1,46%. This finding is differing from those of earlier research and may be due to various reasons, one of them being the high representation of post-COVID merger completions. As discussed earlier, the market conditions are very different than before COVID and regarding short-term value effects, the exact timeframe under research may cause substantially varying results. Also, the relatively moderate sample size may distort the findings.

# 6 Conclusions

Special purpose acquisition companies have experienced a new rise of popularity in the U.S. during the last few years and an especially high volume of new SPACs has occurred in 2020 and 2021. SPACs are shell companies with no operations, essentially formed for the purpose of acquiring a private operating company. A business combination must be completed within two years of the SPAC's IPO and if this criterion is not met, the SPAC will be dissolved, and funds raised will be returned to the external shareholders. SPACs offer a unique investment opportunity to the public, as well as an opportunity for private companies to become public without the traditional IPO process. Research on SPACs is rather limited and focuses mainly on the pre-financial crisis era, which offers a great possibility to extend the earlier analysis.

The goal of this thesis is to study the short-term value-effects of U.S. SPACs around M&A announcement dates and M&A completion dates between January 2014 to June 2021. The empirical research is done by the event study methodology, using the market-adjusted model for obtaining CARs and CAARs and using Russell 2000 index as the benchmark. The event windows chosen are [-10,10], [-5,5], and [-1,1].

The first hypothesis states that the M&A announcements by SPACs create shareholder value on average. This value creation is noted by an abnormal increase in the market price of the SPAC, so that the additional value is obtained from a SPAC share compared to the benchmark index Russell 2000. Overall, the study sample consists of 317 SPACs that announced plans for an M&A between January 2014 and June 2021. The results show that positive cumulative abnormal returns are obtained, and the magnitude varies between 8% to 9,5%. The results are statistically significant at 1% significance level and thus, the null hypothesis is rejected, and hypothesis number one is accepted.

The second hypothesis of this thesis states that M&A completions by SPACs destroy shareholder value on average. This value decrease is observed as an abnormal decline in the market price of the SPAC, compared to the benchmark index. The study sample

consists of 168 SPACs that completed an M&A during the time period under research. The results present that negative cumulative abnormal returns are discovered. The magnitude of the cumulative abnormal returns is around -5% for the two longest event windows, and only -0,5% for the three-day window. The results are statistically significant only for the [-5,5] event window at 10% level, but nevertheless, the null hypothesis is rejected and hypothesis number two is accepted. The study does involve some limitations and the findings must be interpreted with caution. However, based on the values observed and the visual demonstration of stock market behavior around the M&A completion dates, the conclusion is that hypothesis number two can be accepted. Also, statistical significance is very close for the longest event window.

To develop and further research the topic, one could potentially expand the geographical area of SPACs involved in the empirical design, conditional to an increase in SPAC quantity among different continents or countries. Thus far, SPACs have not been as widely used outside the U.S but if the popularity were to increase elsewhere, it would be interesting and useful to see whether the findings are aligned in terms of the performance, structure and terms of the deals. Another possibility would be to study how and to what magnitude the SPAC managers' reputation affects the SPAC's success. Since the external shareholders base their decision to buy solely on their thoughts on the managers' capability to do their job successfully, it would be interesting to see what the characters and references are that matter the most and do they actually impact the outcome. Some studies already consider the benefits of SPACs versus IPOs for the private company, but further research could be done on SPACs versus PE funds in terms of performance of investment for investors and differences in benefits for managers.

# References

Alexandridis, G., Antypas, N., & Travlos, N. (2017). Value Creation from M&As: New Evidence. *Journal of Corporate Finance*, 45, 632–650. https://doi.org/10.1016/j.jcorpfin.2017.05.010

Berger, R. (2008). SPACs: An Alternative Way to Access the Public Markets. *Journal of Applied Corporate Finance*, 20(3), 68–75. https://doi.org/10.1111/j.1745-6622.2008.00194.x

Bodewes, K. (2021). Flipping the Coin: Are Spacs Post-Merger Value-Creating or Value-Destroying? An Empirical Study on the Value Effects of Special Purpose Acquisition Companies in the United States. *An Empirical Study on the Value Effects of Special Purpose Acquisition Companies in the United States (June 10, 2021)*. http://dx.doi.org/10.2139/ssrn.3872422

Boyer, C., & Baigent, G. (2008). SPACs as Alternative Investments: An Examination of Performance and Factors that Drive Prices. *The Journal of Private Equity*, 11(3), 8-15,4. https://doi.org/10.3905/jpe.2008.707198

Brealey, R. A., Myers, S. C., & Allen, F. (2020). *Principles of Corporate Finance* (Thirteenth edition). McGraw-Hill Education.

Cendrowski, H., Petro, L. W., Martin, J. P., & Wadecki, A. A. (2012). *Private Equity: History, Governance, and Operations.* John Wiley & Sons, Incorporated. http://ebookcentral.proquest.com/lib/tritonia-ebooks/detail.action?docID=821829

Chauviere, K., Green, A., & Tan, T. (2020). Earning the premium: A recipe for long-term SPAC success. *The McKinsey Quarterly*.

Chemmanur, T. J., & Fulghieri, P. (1997). Why Include Warrants in New Equity Issues? A Theory of Unit IPOs. *Journal of Financial and Quantitative Analysis*, 32(1), 1–24. https://doi.org/10.2307/2331314

Clifford Chance. (2021, September 3). *Guide to Special Purpose Acquisition Companies*. Clifford Chance. https://www.cliffordchance.com/content/cliffordchance/briefings/2021/09/guide-to-special-purpose-acquisition-companies.html

Cumming, D., Haß, L. H., & Schweizer, D. (2014). The Fast Track IPO–Success Factors for Taking Firms Public with SPACs. *Journal of Banking & Finance*, 47, 198-213. https://doi.org/10.1016/j.jbankfin.2014.07.003

Dimitrova, L. (2017). Perverse Incentives of Special Purpose Acquisition Aompanies, the "Poor Man's Private Equity Funds". *Journal of Accounting and Economics*, 63(1), 99–120. https://doi.org/10.1016/j.jacceco.2016.10.003

Evans, F. C., & Mellen, C. M. (2018). *Valuation for M&A: Building and Measuring Private Company Value*. John Wiley & Sons.

Fama, E. F., Fisher, L., Jensen, M. C., & Roll, R. (1969). The Adjustment of Stock Prices to New Information. *International Economic Review*, 10(1), 1–21. https://doi.org/10.2307/2525569

Feldman, D. N. (2018). *Regulation a+ and Other Alternatives to a Traditional IPO: Financing Your Growth Business Following the JOBS Act*. John Wiley & Sons, Incorporated. http://ebookcentral.proquest.com/lib/tritonia-ebooks/detail.action?docID=5231131

Finkelstein, S., & Cooper, C. L. (2017). *Advances in Mergers and Acquisitions*. Emerald Publishing Limited. http://ebookcentral.proquest.com/lib/tritonia-ebooks/detail.action?docID=4882009

Floros, I. V., & Sapp, T. R. (2011). Shell Games: On the Value of Shell Companies. *Journal of Corporate Finance*, 17(4), 850. https://doi.org/10.1016/j.jcorpfin.2011.03.004

Gahng, M., Ritter, J. R., & Zhang, D. (2021). *SPACs* (SSRN Scholarly Paper ID 3775847). Social Science Research Network. https://doi.org/10.2139/ssrn.3775847

Gorton, G., Kahl, M., & Rosen, R. J. (2009). Eat or Be Eaten: A Theory of Mergers and Firm Size. *The Journal of Finance*, 64(3), 1291–1344. https://doi.org/10.1111/j.1540-6261.2009.01465.x

Graham, B., Dodd, D. L. F., & Cottle, S. (1934). *Security Analysis* (Vol. 452). New York: McGraw-Hill.

Heyman, D. K. (2007). From Blank Check to SPAC: The Regulator's Response to the Market, and the Market's Response to the Regulation. *Entrepreneurial Business Law Journal*, 2, 531.

Hsu, D. H. (2004). What Do Entrepreneurs Pay for Venture Capital Affiliation? *The Journal of Finance*, 59(4), 1805–1844. https://doi.org/10.1111/j.1540-6261.2004.00680.x

Ignatyeva, E., Rauch, C., & Wahrenburg, M. (2013). Analyzing European SPACs. *The Journal of Private Equity*, 17(1), 64-79,5. https://doi.org/10.3905/jpe.2013.17.1.064

Jenkinson, T., & Sousa, M. (2011). Why SPAC investors should listen to the market. *Journal of Applied Finance* (Formerly Financial Practice and Education), 21(2).

Jensen, M. C. (1986). Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers. *The American Economic Review*, 76(2), 323–329. http://dx.doi.org/10.2139/ssrn.99580

Jensen, M. C. (1988). Takeovers: Their Causes and Consequences. *Journal of Economic Perspectives*, 2(1), 21–48. https://doi.org/10.1257/jep.2.1.21

Kanniainen, V., & Keuschnigg, C. (2004). Start-up Investment with Scarce Venture Capital Support. *Journal of Banking & Finance*, 28(8), 1935-1959. https://doi.org/10.1016/j.jbankfin.2003.07.005

Kaplan, S. N., & Stromberg, P. (2009). Leveraged Buyouts and Private Equity. *Journal of Economic Perspectives*, 23(1), 121–146. https://doi.org/10.1257/jep.23.1.121

Kedia, S., Ravid, S. A., & Pons, V. (2011). When Do Vertical Mergers Create Value? *Financial Management*, 40(4), 845–877. https://doi.org/10.1111/j.1755-053X.2011.01164.x

Kitching, J. (1967). Why do Mergers Miscarry? *Harvard Business Review*, 45(6), 84–101.

Klausner, M., Ohlrogge, M., & Ruan, E. (2020). *A Sober Look at SPACs* (SSRN Scholarly Paper ID 3720919). Social Science Research Network. https://doi.org/10.2139/ssrn.3720919

Kolb, J., & Tykvová, T. (2016). Going Public via Special Purpose Acquisition Companies: Frogs Do Not Turn Into Princes. *Journal of Corporate Finance*, 40, 80–96. https://doi.org/10.1016/j.jcorpfin.2016.07.006

Lakicevic, M., Shachmurove, Y., & Vulanovic, M. (2014). Institutional Changes of Specified Purpose Acquisition Companies (SPACs). *North American Journal of Economics and Finance*, 28, 149. https://doi.org/10.1016/j.najef.2014.03.002

Lakicevic, M., & Vulanovic, M. (2013). A Story on SPACs. *Managerial Finance*, 39(4), 384–403. http://dx.doi.org.proxy.uwasa.fi/10.1108/03074351311306201

Lewellen, S. (2009). *SPACs as an Asset Class* (SSRN Scholarly Paper ID 1284999). Social Science Research Network. https://doi.org/10.2139/ssrn.1284999

Lewellen, W. G. (1971). A Pure Financial Rationale for the Conglomerate Merger. *The Journal of Finance*, 26(2), 521–537. https://doi.org/10.2307/2326063

MacKinlay, A. C. (1997). Event Studies in Economics and Finance. *Journal of Economic Literature*, 35(1), 13–39. http://www.jstor.org/stable/2729691

Melicher, R. W., & Hempel, G. H. (1971). Differences in financial characteristics between conglomerate mergers and horizontal or vertical mergers. *Nebraska Journal of Economics and Business*, 10(4), 61-74.

Metrick, A., & Yasuda, A. (2010). The Economics of Private Equity Funds. *The Review of Financial Studies*, 23(6), 2303–2341. https://doi.org/10.1093/rfs/hhq020

Pavlou, A. (2015). Learning by Doing and Horizontal Mergers. *Journal of Economics*, 116(1), 25–38. https://doi.org/10.1007/s00712-014-0423-3

Riemer, D. S. (2007). *Special Purpose Acquisition Companies: SPAC and SPAN, or Blank Check Redux?* 85, 38.

Ritter, J. R., & Welch, I. (2002). A Review of IPO Activity, Pricing, and Allocations. *The Journal of Finance*, 57(4), 1795–1828. https://doi.org/10.1111/1540-6261.00478

Rodrigues, U., & Stegemoller, M. (2014). What All-Cash Companies Tell Us About IPOs and Acquisitions. *Journal of Corporate Finance*, 29, 111. https://doi.org/10.1016/j.jcorpfin.2014.07.003

Roll, R. (1986). The Hubris Hypothesis of Corporate Takeovers. *The Journal of Business*, 59(2), 197–216. https://www.jstor.org/stable/2353017

Sahlman, W. A. (1990). The Structure and Governance of Venture-Capital Organizations. *Journal of Financial Economics*, 27(2), 473–521. https://doi.org/10.1016/0304-405X(90)90065-8

Shachmurove, Y., & Vulanovic, M. (2015). Specified Purpose Acquisition Companies in Shipping. *Global Finance Journal*, 26, 64. https://doi.org/10.1016/j.gfj.2015.01.005

Shachmurove, Y., & Vulanovic, M. (2018). *SPAC IPOs*. https://www.econstor.eu/handle/10419/177392

Sjostrom, W. K. J. (2007). The Truth about Reverse Mergers. *Entrepreneurial Business Law Journal*, 2, 743.

SPACInsider. (2021). *SPACInsider*. https://spacinsider.com/

Trautwein, F. (1990). Merger Motives and Merger Prescriptions. *Strategic Management Journal*, 11(4), 283–295. https://doi.org/10.1002/smj.4250110404

U.S. securities and exchange commission. (2021, May 25). SEC.gov | *What You Need to Know About SPACs – Updated Investor Bulletin.* https://www.sec.gov/oiea/investor-alerts-and-bulletins/what-you-need-know-about-spacs-investor-bulletin

Vulanovic, M. (2017). SPACs: Post-Merger Survival. *Managerial Finance*, 43(6), 679–699. https://doi.org/10.1108/MF-09-2016-0263

Weber, Y. (1996). Corporate Cultural Fit and Performance in Mergers and Acquisitions. *Human Relations*, 49(9), 1181–1202. https://doi.org/10.1177/001872679604900903