An Overview of SPACs and the 2020-2021 SPAC Surge

by
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A THESIS

submitted to
Oregon State University
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Honors Baccalaureate of Science in Finance
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This paper provides a literature review in order to capture the state of the Special Purpose Acquisition Company (SPAC) market, incorporating the most recent research from 2020 and 2021. SPACs are an alternative way to take a company public. Rather than going through the traditional IPO process to access public markets, the SPAC is a shell that raises money through an IPO. After raising IPO proceeds the SPAC has two years to find a private company to take public via merger. This paper goes through the life cycle of the SPAC and incorporates research on how different features of the SPAC structure affect its performance.

Key Words: Special Purpose Acquisition Company, SPAC, IPO, SPAC Sponsor, Acquisitions, Blank Check Company, Reverse Merger

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I understand that my project will become part of the permanent collection of Oregon State University, Honors College. My signature below authorizes release of my project to any reader upon request.

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1. Introduction

Special Purpose Acquisition Companies (SPACs) are publicly traded shell companies that provide a way for private companies to become public. SPACs accomplish this by finding a private target company and merging with it; this is opposed to the traditional method of a private company pursuing an initial public offering (IPO) or direct listing in order to access public markets. In 2020 and 2021 SPACs have surged in popularity. Waves of SPACs have risen and fallen since their inception in 2003, but the recent wave is by far the largest. In 2020, 248 SPAC IPOs raised more than $75.3 billion, which was more capital raised than all previous years combined, reported by Gahng et al. (2021). As of October 2021, there have been 527 SPAC IPOs raising more than $144 billion in proceeds. Because the resurgence of SPACs is a recent development, the amount of research, especially research covering the 2020-2021 SPAC surge, is sparse. This literature review will cover a variety of past SPAC research, with an emphasis on recent studies. This paper will seek to provide a summary of the current SPAC market. It will also aim to provide an updated and comprehensive view of research, past and present, so that someone seeking an education on SPACs may understand their history and how they function in the current environment.

First, this paper will summarize SPAC structure and general history. The second section will go over modern shifts in the SPAC structure, particularly the conversion threshold increasing and the trust value increasing in response so the sponsor has more “skin in the game.” The third section will detail the role of the sponsor and how it corresponds to the role of a private equity fund manager. The fourth section will compile research on different factors influencing SPAC returns. This section will emphasize recent studies because SPACs have not been in existence

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1 “US SPAC IPO Issuance” SPAC Research [https://www.spacresearch.com/](https://www.spacresearch.com/)
long enough to provide the history of data and past research available with other methods of raising capital, such as traditional IPOs. The fifth section will provide an overview of recent updates in the SPAC market, particularly the 2020-2021 SPAC surge. Finally, the sixth section will conclude.

**Traditional IPOs**

The most common route to access the public market is through an initial public offering (IPO). An IPO allows the private company to raise capital, which is also referred to as IPO proceeds. They accomplish this by selling shares, which are then traded publicly after this first offering. After the IPO anyone may buy and sell the now public shares. In order for a private company to become public via an IPO, they must be backed by an underwriter, usually a large financial institution. The underwriter performs due diligence to evaluate the company and looks for buyers to determine a share price. The IPO process is long, often ranging from 6 months to a year, as due diligence and setting the share price takes time. An IPO is also expensive, the underwriter charges a fee as a percent of proceeds, often as high as 7%. Underpricing is another cost, where the underwriter seeks to profit by purchasing the shares at a lower price so it can sell them for higher at the IPO. SPACs are a route to public markets that circumvents the traditional IPO process. Rather than a private company raising funds by going public in a traditional IPO, a SPAC goes public first and then searches for an unknown company to take public. SPACs have been referred to as blank check companies because both blank check companies and SPACs have no assets or operations and are publicly traded shells looking for a target company to take public. Blank check companies and SPACs raise proceeds in an IPO that are set aside for their future target. Without assets or operations to examine, SPACs complete the IPO process relatively quickly compared to a traditional IPO. The SPAC then trades publicly, but as an empty shell.
SPAC investors are investing in the expertise of the management and their ability to find a quality private target. When the SPAC finds a private company, the SPAC will merge with the private company and the private company will then be public. For the private company, the date of the merger functions as an IPO, as they receive capital from the SPAC and become publicly traded. Since the private company utilizes a merger instead of a traditional IPO, this allows them options that traditional IPOs do not have such as making forward looking statements. Forward looking statements cannot be disclosed by a company in a traditional IPO but are allowed for companies involved in a merger. SPAC mergers are widely proclaimed to be faster and cheaper than traditional IPOs. Despite these assumptions, SPACs are not necessarily faster, and they have hidden costs from share dilution that are not as obvious as the upfront fee of a traditional IPO.

**SPAC IPO Period and Post-Merger Period**

The SPAC timeline can be divided into two segments. The first begins with the SPAC IPO and continues until the merger is completed or the SPAC is liquidated. The second period starts when the post-merger company is formed after the business combination. These segments are titled in many different ways by different researchers. Gahng et al. (2021) named them the SPAC and deSPAC periods. Other names include SPAC IPO to M&A and after M&A, pre-merger and post-merger, etc. but the research is segmented in the same way. This paper will use the titles of SPAC period and post-merger period, straightforward descriptions for a reader with little knowledge of SPACs. The SPAC period contains the search for a target company, the potential target announcement, and the vote. The business consummation, the start of the post-merger period, functions as an IPO for the private company as it is the day the company becomes publicly traded. The SPAC period and post-merger period attract different types of investors and provide different returns.
The SPAC period attracts hedge funds and other institutional investors. These institutional investors buy SPAC units at the IPO but sell or redeem before the merger. The post-merger period attracts a different set of investors. Similar to investors who buy into a company after a traditional IPO, post-merger period investors are investing in a newly public company. It is uncommon for SPAC period investors to hold shares through the merger into the post-merger period. The returns for such investments have been dismal, both short term and long term, with this strategy. During the post-merger period, shareholders who have kept their shares through the merger bear the dilution cost from those who redeemed their shares and sponsor promote. Share dilution from redemptions, the sponsor promote, and warrants is an issue embedded in the SPAC structure, which will be discussed in upcoming sections on the role of the sponsor and empirical research. Post-merger SPAC returns have been poor, Klausner et al. (2020) find that SPAC mergers never outperformed the Russell 2000 with the best year of SPAC merger returns underperforming 10%. Other researchers have also found dismal SPAC returns and underperformance after the merger is completed.

**SPAC Timeline**

A SPAC is formed by a sponsor, usually an expert in a specific industry or a wealthy investor. As the SPAC founder, the sponsor will hold a significant portion of SPAC shares which will become a large percentage of the merged company. Klausner et al. (2020) find that after the merger, SPAC shareholders including the sponsor hold a median of 34% of the company, with the sponsor alone holding 12%. Sponsors have the most to gain from a successful merger, as they often hold a large percentage of the merged company. First, the sponsor registers SPAC units with the SEC to be approved. Once they are approved, the SPAC IPO occurs. The SPAC follows the same process as any other company in an IPO, partnering with an underwriter to set a price
and sell shares. As previously mentioned, a SPAC has no business or revenue to examine, so their IPO will happen faster than a traditional IPO. An example of the SPAC timeline is provided in Appendix A, which follows Virgin Galactic from the SPAC IPO through the merger. Just as any other IPO, the SPAC IPO generates proceeds for the company. SPAC shares are sold bundled together with warrants in a SPAC unit. Buying a warrant gives the holder the right to buy shares at a certain exercise price within a specified time period. When warrants are exercised, new shares are issued, consequently diluting holdings owned by existing investors. One SPAC unit is usually made up of one share and one fraction of a warrant. SPAC units can be bought and sold immediately, as with any IPO. The units are unbundled after a predetermined number of days, meaning the shares and warrants are no longer bound as a unit and will trade separately.

Shares are traditionally priced at $10.00 and warrants exercisable at $11.50. SPACs are priced this way to avoid regulations that occur for companies with shares valued lower than $4.00, but it is also arbitrarily set. The price does not reflect the value of the SPAC since it is a shell company. The SPAC will have an amount of proceeds it seeks to raise, and the number of shares issued or the starting share price can be adjusted to match this amount, and $10.00 is the traditional price for modern SPACs. A large portion of shares are sold to the sponsor at a nominal price, usually $25,000 for 20% ownership of the SPAC. This sponsor compensation is typically called a promote but has been called other names such as sponsor shares or founder shares. Promote shares usually do not have voting rights and cannot be redeemed, unlike other SPAC shares. Proceeds from the IPO are placed in escrow along with the sponsor’s promote. The proceeds and shares are only available after an acquisition and are often under a lockup provision meaning that percentages of shares are released to the sponsor after the merged
company share value reaches price targets, for example $12, $14, and $16. The trust is invested in Treasury bonds, and funds may only be released for the sole purpose of the business combination or liquidation of the SPAC if it cannot consummate a merger.

With SPAC IPOs, part of the underwriter fee is paid upfront, with the second part of the fee deferred, contingent on a successful merger. Gahng et al. (2021) reports SPAC underwriter fees tend to be 5.5%, often with 2% paid upfront while the rest of the fee is deferred. SPAC IPOs tend to have lower underwriter fees than traditional IPOs, but they still drain the trust value. Part of the SPAC IPO proceeds are used to pay costs from searching for the target and underwriter fees. To cover these costs and fees, the sponsor can purchase private placement warrants, putting their own money into the SPAC and keeping the value of the trust high. The share price of the SPAC can fluctuate, even though the sponsor and managers are the only sources of potential value. SPACs traditionally have 18-24 months to find a company and merge. This target company has been called the target, private target, and operating company in literature but they all refer to the same entity. After the SPAC completes its IPO the countdown begins. If no merger is completed in the time given, the SPAC is liquidated. Investors receive the pro-rata trust value of their shares, which is their money back plus any interest their shares earned in the trust. Sponsors lose their entire investment as their compensation is only from the promote and warrants which are worthless at liquidation.

During the 18-24 months after the IPO, the SPAC will search for a target to merge with. Usually this target is in a field that aligns with the sponsor’s area of expertise, and this field is often declared in the SPAC IPO prospectus. Once a possible target or targets are identified, negotiations occur over how much capital they will receive. Generally, the target company must be at least 80% of the trust value. It is often asked why a target would choose a SPAC over a
traditional IPO. Dimitrova (2017) finds that the target may desire a SPAC merger to avoid the long IPO process, avoid high costs, provide liquidity to owners wanting to cash out of the target, and gain extra capital and expertise from the manager.

At the acquisition announcement, the SPAC reveals its target company to the investors. Whether the investors react negatively or positively to this announcement affects the share price of the SPAC. The merger announcement may be accompanied by forward looking statements; as mergers SPACs deals are protected under the Private Securities Litigation Reform Act. As Klausner et al. (2020) discusses, the Private Securities Litigation Reform Act encourages public companies to disclose information by providing a safe harbor from liability for forward looking statements. IPO prospectuses are excluded from this protection. The safe harbor provision may be a reason private companies seek a SPAC merger. They can utilize this regulatory loophole to make revenue or earnings forecasts.

After the announcement, the shareholders then vote to approve or veto the merger. A majority of shareholders must approve, and share redemptions must be below a set threshold for the merger to pass. Shareholders can choose to redeem their shares for the pro-rata trust value when the merger is completed. The redemption option is a unique aspect of the SPAC structure, and another feature that sets it apart from the traditional IPO. Being able to redeem the value of the shares plus any interest gained provides safety to SPAC IPO investors. Traditional IPO investors do not have the option to get their money back. Additionally, investors can keep their warrants even if they redeem their shares. This redemption option provides liquidity to shareholders and is an essentially riskless investment with upside potential.

SPACs have a set threshold of the highest amount of redemptions that can occur. The merger must pass the vote as well as the redemption threshold or else the merger will fail. Both of these
mechanisms motivate SPAC sponsors to find a quality target that satisfies SPAC investors. Historically, the redemption threshold was set at 20%, but over time it has increased. Lakicevic et al. (2013) find that from 2003-2006 the threshold level was 20.47% increasing to 84.24% from 2009-2012. Even if redemptions do not surpass the threshold and the merger goes through, a high number of redemptions impacts the merged company poorly. Klausner et al. (2020) found that the mean and median redemption rates were 58% and 73% for the 2019-2020 Merger Cohort and that 77% of SPACs raised additional money at the time of their mergers. Redemptions drain the value of the trust, leaving less capital for the target. Because of this potential problem from redemptions, SPAC targets will set a minimum requirement of proceeds received in the merger agreement. If the trust value falls below this, they can renegotiate and accept a lower offer. The target may accept a new deal with less capital or seek out a private investment in public equity (PIPE). Sponsors, who are usually well connected, will seek out PIPE investors to replenish the trust. Even the sponsor themselves can function as a PIPE investor. Of the SPACs that raised additional money at the time of the merger in the 2019-2020 Merger Cohort from Klausner et al. (2020), 83% raised money from third party investors, 61% raised money from the sponsors, and 44% raised money from both. The availability of PIPE funding to SPACs is another source of capital to the target, an advantage that is not part of the traditional IPO process. In fact, Klausner et al. (2020) reports 40% of the cash the SPAC delivered in the merger came as cash infusions from the sponsor or a third party.

If the vote passes and redemptions are below the threshold, the SPAC and target complete their merger. The target receives capital from the SPAC and trades publicly. Often, the SPAC sponsor joins the board of the post-merger company. SPAC shareholders, including the sponsor and their stake, own a mean and median of 40% and 35% of the post-merger company in the
2019-2020 Merger Cohort presented by Klausner et al. (2020). If the merger fails, the SPAC can continue to look for a new target if they have not reached the end of the 24-month time limit. If the usual two years are up, the SPAC liquidates and investors receive their money back as the pro-rata share value.

**SPAC Origins**

SPACs originated as a response to regulations against blank check companies, which were the subject of many fraudulent penny stock schemes in the 1980s. Heyman (2007) details the history of blank check companies. Blank check companies would IPO with no specific business plan and seek to raise money to buy an existing company. Fraudulent “pump and dump” schemes would occur wherein excitement was generated about a blank check penny stock, which was easily manipulated, and shares were sold that were actually worthless. This rampant problem prompted the Penny Stock Reform Act of 1990, with an emphasis on rules about disclosure. Blank check companies were regulated and not banned outright because they could be a useful method to raise money, if done correctly. This regulation was successful, and blank check companies essentially disappeared until the creation of SPACs.

SEC Rule 419 is the section of the Penny Stock Reform Act specifically outlining rules for blank check companies. There were six provisions: the proceeds must be kept in a trust until the purchase is made, once a target is determined its financial statements must be disclosed, at the acquisition agreement a prospectus is sent to investors which are provided the opportunity to exit, redemptions will be given to investors that choose to exit, the acquisition must be valued at least 80% of the proceeds, and a time limit is set at eighteen months. Rodrigues and Stegemoller (2012) also discuss Rule 419. Rule 419 defines a blank check company as a company that has the sole purpose of merging with an unidentified target and issues penny stock, which includes stock
worth less than $4.00 a share and a company market value less than $5 million. SPACs escape the definition and therefore escape the regulation of a blank check company by issuing a higher share price, conventionally $10.00 a share, and not issuing penny stock. Despite not falling under regulation, SPACs still follow many Rule 419 requirements anyway. A comparison of Rule 419 to the features and functions of SPACs will find that they are remarkably similar. This is because unlike fraudulent blank check companies, SPACs look to attract legitimate investors. Heyman (2007) observes that the SPAC is structured specifically to avoid the regulation of Rule 419 and yet still serves the purpose of the rule.

Blank check companies died out because of fraudulent use in the 1980s. They returned in the updated format of a SPAC, with new rules to protect investors. SPACs have several differences from a blank check company regulated by Rule 419, listed by Riemer (2007) and Heyman (2007). The most significant differences within SPACs are that stocks and warrants can be bought and sold rather than held until the merger, warrants are usually not exercisable until after the merger rather than at any time, and SPACs can add on an additional six months to the eighteen months of the blank check time limit.

Riemer (2007) discusses why SPACs are an improvement on blank check companies, and a distinction Riemer makes is that protections are provided to accredited investors from reputable sponsors of SPACs whereas unsophisticated investors can be deceived by disreputable managers of blank checks. Although there are some SPAC sponsors who create more than one SPAC or are serial sponsors, Rodrigues and Stegemoller (2012) argue there is not the system of reputation building and reliance that is embedded in the private equity landscape since the SPAC life cycle is much shorter.
Riemer (2007) divides SPACs into a first generation and a second generation. The first generation of SPACs appeared in the 1990s. In 1993, David Nussbaum created a blank check hybrid. This hybrid was the first form of the SPAC, and he created thirteen hybrids between 1993 and 1994, of which twelve completed acquisitions. The new form disappeared until 2003 when small companies that benefited from SPACs could access the traditional IPO market during the tech boom. The second generation started in 2003 with Nussbaum’s EarlyBirdCapital underwriting Millstream Acquisition Corp. as it went public as the first of this new wave, completing a merger in 2004. Rodrigues and Stegemoller (2012) label Millstream Acquisition Corp. as the start of the second wave. Originally only listed on the over-the-counter bulletin board, in 2005 SPACs could list on the American Stock Exchange (AMEX), and in 2008 they could list on the NYSE or NASDAQ. This wave peaked in 2007 with 65 SPAC IPOs, 26.6% of all successful IPOs that year, as reported by Riemer (2007). They subsequently died out during the financial crisis in 2008. Another wave began in 2010, picking up in 2016 and surging in 2020. This surge continued into 2021, peaking in February.

2. **SPAC 2.0 to SPAC 3.0 – Modern Changes and SPACs today**

The third generation of SPACs, as Rodrigues and Stegemoller (2012) define it, takes place from 2009-2011. They found that over time, the thresholds for minimum required votes and maximum redemptions have grown and the percent held in the trust has increased. Voting rights of investors have weakened, but a higher trust value makes redemptions more appealing. If more investors redeem, more money is withdrawn from the fund in escrow, and more money must be paid by the sponsor to replenish the trust. Even with weaker voting rights, investors still have voice. Investors want sponsors to put in more of their own funds, increasing their risk capital.
This risk capital is often termed “skin in the game” by commentators. Sponsors increase the trust value and safety for investors with their own private placements.

When SPACs first emerged, the trust value was often below 100%. The proceeds in the trust were used to pay fees, leaving the remainder below its initial value. As SPACs have evolved, the amount in the trust has increased and investor voting power has weakened. The voting threshold has increased to prevent opportunistic investors from “greenmailing,” using their large blocks of shares to threaten voting against the merger unless they are compensated. Since mergers are approved much more easily, investors want sponsors to have more “skin in the game.” It has become expected that the sponsor will purchase warrants to top up the trust value. Adding to the trust creates more risk for the sponsor and protects shareholder investments. If shareholders redeem they will receive the full amount of their investment back plus any interest earned while in the trust.

From second generation SPACs to the third generation of SPACs, the redemption threshold increase has been documented by many researchers. The redemption threshold, sometimes called the conversion threshold, is the percentage of shares that can be redeemed that still allows the merger to pass. Lakicevic et al. (2013) find that from 2003-2006 the threshold level was 20.47% increasing to 84.24% for 2009-2012. On the same timeline, proceeds in trust accounts increased from 93% in the first period to 101% in the last. Rodrigues and Stegemoller (2012) find that from 2003-2011 the redemption threshold increased from 20.0% to 74.4% and the percent held in the trust increased from 85.0% to 100%. Vulanovic (2016) finds from 2003-2013 the percentage of IPO proceeds held in trust increased from 85% to 100.01%. This corresponds to underwriter fees shrinking from 10% to 4.75% of total proceeds. The redemption threshold level increased from 20% to 81.52%.
These changes were made in response to the aggressive investment strategies that investors with short term goals, namely hedge funds, use to take advantage of the SPAC process. Lewellen (2009) notes that hedge funds account for the overwhelming majority of institutions investing in SPAC IPOs. One of these strategies is greenmailing. Aggressive hedge funds threaten to prevent the merger by redeeming a large block of shares and force the SPAC to buy their stake for above market price.

Gahng et al. (2021) discuss two important changes that occurred in 2010. The first change was that the voting and redemption rights were separated. Previously, an investor only had the redemption option if they voted against the merger. In 2010, investors could approve the merger and still be allowed to redeem their shares. This creates an incentive for investors to approve any merger, even a bad one, to prevent losing their warrants. The second change was that sponsors started to top up the trust value by purchasing private placement warrants. Gahng et al. (2021) report that this purchase is usually $5 million or more. With more redemptions becoming more powerful, sponsors now have more “skin in the game,” incentivizing the sponsor to propose a good merger.

Although voting was uncoupled and changes to the redemption threshold occurred to prevent greenmailing, hedge funds are still heavily involved as SPAC investors. Hedge funds hold larger blocks of shares, and as the most common type of SPAC investor, this creates problems for retail investors. Rodrigues and Stegemoller (2021), their most recent work, covers this issue. The quantity of inside investors, institutional investors and hedge funds, creates illiquid stock. Retail investors pay more than the redemption value to buy shares, because shares must be purchased from institutional investors rather than the SPAC itself. Despite many shares that have been issued by the SPAC, few are available for trade. SPACs are essentially “insider IPOs.”
Rodrigues and Stegemoller (2021) go on to argue how the split voting rights should be reunited. They argue that the change in voting took the impact away from investors, almost guaranteeing merger approval, which allows poor quality companies to go public destroying investor value.

Gahng et al. (2021) found that a high redemption ratio predicts an underperformance of returns during the deSPAC period post-merger. In addition to being a potential signal of a bad deal, high redemptions drain the trust value. In order to restore the amount in the trust, the sponsor seeks out private investment in public equity (PIPE). Sponsors are often high profile and well connected, which is key to finding PIPE investment. Often sponsors will act as the PIPE investor themselves in order to provide the target company with enough cash.

**PIPE Investment and Reverse Mergers**

Access to PIPE investment is another key feature of SPACs. While there is no provision against PIPE in traditional IPOs, it is not standardized in the IPO process as it is for SPACs. Sjostrom (2008) discusses how reverse mergers are a method to access PIPE investment, though they lack the benefits of an IPO. SPACs can provide the role of an IPO as well as access to PIPE investments.

Sjostrom (2008) covers the pitfalls of reverse mergers, primarily how they are not a cheaper nor faster IPO, especially since the companies that pursue reverse mergers cannot access an IPO. He provides the stipulation that SPACs are similar to reverse mergers while providing some of the benefits that reverse mergers lack. Reverse mergers occur when a shell company merges with a private company so that the private company shareholders hold most of the shares. Reverse mergers are a cheaper way to go public, but are subject to problems with asymmetric information. When the firm goes public, there are no disclosure requirements and unattractive aspects of the firm are hidden. Reverse mergers are a method to access PIPE investments, which
is how they raise capital. Reverse mergers are similar to SPACs, in fact some SPACs are a type of reverse merger but with more disclosure. Unlike an IPO, a reverse merger (RM) does not have a cash infusion and easily tradeable stock since there is no underwriter to find the market. SPACs are the exception to these aspects of RMs since they are able to provide both. SPACs come with the benefits of attracting PIPE investment and having easily tradeable shares. Rodrigues and Stegemoller (2012) describe SPACs as reverse mergers “done right.”

PIPE also functions as a way to signal the quality of the SPAC. As Klausner et al. (2020) mentions, PIPE investors are given privileged information on the merger target while performing their due diligence. Private placement investors are allowed “over the wall” and have more information to assess the target than a traditional IPO investor. If a high-profile investor decides to provide PIPE investment, it signals the high quality of the merger.

There continues to be change in SPACs. With high demand, SPAC sponsors have begun to offer fewer warrants, as observed by Gahng et al. (2021). SPACs will likely continue to change until the benefits and detriments are in equilibrium if they are to remain a prominent option to access the public market.

3. Importance of the SPAC Sponsor

SPAC Sponsor Overview

The sponsor is a key aspect of a SPAC since SPACs are shells with no business plan and history. Potential investors do not have operations to examine to determine the value of the company. SPAC shareholders are investing in the management team and sponsor to find a quality target. A study from Blomkvist et al. (2021) examined SPACs from 2003 to 2018 to find the common characteristics of SPAC CEOs. They determined that the general profile of a SPAC CEO is male, 50 years old, and experienced in the financial sector. Sponsors are often wealthy
and well connected as they need to find, and in many cases act as, PIPE investors. As previously discussed, redemptions are no longer contingent on a vote against the merger. Lin et al. (2021) discusses how investors do not downvote deals in order to have value in their warrants, so the quality of the sponsor is crucial to the success of the SPAC since nearly all deals are approved.

Bai et al. (2021) discuss how sponsors act as non-bank intermediaries to certify value increasing, risky firms in a segmented market where yield seeking investors turn to SPACs. The certification role that the SPAC sponsor plays can be likened to the certification role of an underwriter in a traditional IPO. Bai et al. (2021) explain the certification role traditionally taken by banks, and how sponsors have adopted it in the SPAC market. Traditional IPOs are underwritten by investment banks. The due diligence and research they perform before underwriting certifies the quality of the company going through the IPO. This mitigates adverse selection from information asymmetry of investors buying into a firm that is withholding relevant information. As an intermediary buying shares of the company and then selling those shares on the public market, investment banks are subject to underwriter liabilities from lawsuits for underperformance from omissions. These liabilities prevent them from taking quality but risky firms public, resulting in an environment where only quality and safe firms have access to the public market. This creates a niche for SPACs as a vehicle for quality but risky firms to go public. As the sponsor brings industry and financial credibility, Bai et al. (2021) explain that SPAC sponsors act as non-bank intermediaries to bring value-creating risky firms public. As the sponsor promote hinges on a successful merger and post-merger performance, the incentive of the sponsor is to bring a high-quality firm public.

Research on sponsor network centrality, the professional connections the sponsor has in the private equity and venture capital industries, comes from Lin et al. (2021). Their study finds that
a sponsor with stronger connections leads to more capital. One standard deviation increase of sponsor PE network centrality leads to $44.67 million increase in IPO proceeds and $53.87 million increase in PIPE investment. They find that a better sponsor network leads to higher performing post-merger returns, specifically one standard deviation increase in sponsor PE network centrality leads to 2.1% higher monthly alpha two years post-merger. Sponsors with high network centrality have stronger deal sourcing and target picking ability, increasing the success rate of the merger and better long run performance. Despite the advantages brought by a sponsor with high network centrality, Lin et al. (2021) found that SPACs still underperformed the market. Klausner et al. (2020) finds that SPACs sponsored by large funds or Fortune 500 CEOs are still highly dilutive like the majority of SPACs, but they perform better and are slightly less dilutive than their counterparts with lower quality sponsors. SPAC sponsors can produce enough value in their ongoing involvement to replace the value lost to dilution. Yet high profile sponsors can be involved with poorly performing SPACs, so a quality sponsor does not guarantee making up for lost value.

SPAC sponsors are crucial to the terms and quality of the final deal. An unknown number of redemptions is a large source of uncertainty for the target. To eliminate some of this uncertainty, the target will require a minimum amount of cash from the merger. If too much cash is depleted from redemptions, the sponsor is responsible to find PIPE investors in their network or use their own cash to replenish the trust. Even if PIPE investments are not found, the target will often waive the cash requirement rather than forfeit going public altogether. Klausner et al. (2020) cites these negotiations as the reason why SPACs do not provide more certainty than traditional IPOs. Proponents of SPACs have argued that the trust value of the SPAC provides certainty for the private company regarding the cash it will receive when it goes public. In situations with
high redemptions, sponsors may pay an inducement to SPAC shareholders to not redeem. This inducement is a side payment of promote shares or sponsor warrants to existing shareholders, often at a discounted price, in exchange for a commitment not to redeem or sell. Gahng et al. (2021) mention how sponsors forfeit some of their shares and warrants to PIPE investors in order to save weak deals characterized by high redemptions. They assess that the sponsor’s profit is not as lucrative as it may appear. On average the sponsor will forfeit 34% of the shares in the promote and 42% of their private placement warrants. These “sponsor haircuts” provide shares to PIPE investors at a discounted price or are used to induce investors to not redeem.

**SPACs and Private Equity**

SPACs are often compared to private equity (PE) firms, including venture capital funds and buyout funds. In relation to their private equity cousins, SPAC sponsors play a similar role to PE fund general partners (GPs). Rodrigues and Stegemoller (2012) detail the structure of SPACs as a hybrid of private equity. PE GPs find companies to add to their investment portfolio for the duration of their time horizon, often ten years. SPAC sponsors search for a target to invest the funds from their IPO but SPACs are a one-shot deal rather than an ongoing portfolio. Even after one fund ends, GPs hope to use their reputation and success at the first fund to attract more money and form a large, and hopefully even more profitable fund. Reputation and expertise are emphasized as a source of credibility for the sponsor to convey the value of the SPAC, which is difficult given their short-term nature.

SPACs share these similarities with private equity and simultaneously provide access to the public market and liquidity. Riemer (2007) describes SPAC as the public version of a buyout fund. Buyout funds are a form of private equity that raises funds for an acquisition and focuses on profits only after the merger. PE funds are only open to investment from accredited investors,
which are wealthy and experienced individuals and institutions that fully understand the risks they are undertaking. Riemer (2007) uses these investors to draw another parallel between buyout funds and SPACs by emphasizing that accredited investors, most notably hedge funds, are primary investors in SPACs. They go on to mention that SPACs are marketed to hedge funds, equity funds, and other institutional investors, which is in contrast to the often unsophisticated victims of blank check scams. SPACs have transformed from their blank check predecessors and this transformation is reflected in their core investors.

The parallels between PE funds and SPACs are why SPACs have been labeled “the poor man’s private equity.” Rodrigues and Stegemoller (2012) endorse the nickname “poor man’s private equity,” the public aspect of SPACs gives retail investors an opportunity to invest in expert managers, previously an opportunity only available to accredited investors backing PE GPs. Klausner et al. (2020) disagree however, finding that the vast majority of SPAC shares are held by institutional investors, not retail investors. They examined SPAC ownership by looking at funds that filed Form 13F, a form that SEC requires of large funds. Median SPAC ownership of 13F filers is 85% after the IPO and 87% pre-merger. This amount of ownership is likely understated because some shares are held by insiders, wealthy individuals, and some institutional shareholders are not required to file form 13F. SPAC investors are hedge funds, not retail investors. Unlike private equity where investors maintain their position for the duration of the fund and through any portfolio changes, most hedge funds exit their SPAC positions before the merger instead of holding through the acquisition of the target. While there may be some retail investors who hold their positions into the post-merger period, it is not enough to merit the description of “poor man’s private equity.” Rodrigues and Stegemoller (2021) even go so far as
to label SPACs as “insider IPOs” because despite their public status, SPAC shares are held by a few large institutional players.

**SPAC Sponsor vs. PE Manager**

Rodrigues and Stegemoller (2012) describe how the SPAC structure of sponsor compensation, manager “skin in the game,” limited time horizon, and contractual limits on investments are borrowed from private equity structures. They detail how each of these functions apply to both SPACs and PE funds. The role of the fund GP is usually filled by the PE manager; GPs make the investment decisions and other fund investors have little to no influence as limited partners. SPACs follow suit with the sponsor selecting the target and investing with funds from SPAC investors. SPAC sponsors and PE managers are both compensated with the “Magic 20.” Managers receive carried interest, or carry, which is 20% of realized fund profits in addition to a management fee that is 2-2.5% of the capital in the fund. Sponsors, as discussed previously, buy a 20% stake in the SPAC and do not receive a management fee. Originally SPAC sponsors did not have much “skin in the game” but over time have increasingly contributed more of their own money. On average sponsors commit 2.5% of the SPAC proceeds, PE manager contributions of fund capital are estimated to be 3.25% for venture capital and 2.1% for buyout funds. The PE manager contributes to the fund to show their alignment with investor interest. Regarding the time horizon, PE funds tend to have a time horizon of ten years, while SPACs have two years to merge with a target. One aspect of private equity that SPACs deter from completely is a contractual limit on investments. PE funds have a limit on how much can be invested in a single company in their portfolio. SPACs do not have a portfolio. As a result they do not have contractual limits on investments since they invest in a single company.
SPAC sponsor compensation, the 20% promote, parallels PE manager compensation. Pieces of sponsor compensation have been explained differently by different researchers, as they describe how sponsor compensation creates incentives to complete a merger. Rodrigues and Stegemoller (2012) equate the sponsor promote with GP carried interest. The PE GP carried interest, which is 20% of profits, is equivalent to the 20% SPAC sponsor promote. Gahng et al. (2021) equates the SPAC sponsor’s 20% promote to PE GP management fees. At 2% a year, the present value of management fees over the lifetime of the fund is about 20% of capital committed. They describe the private placement warrants at the time of the SPAC IPO as the counterpart to PE GP carried interest. Both carried interest and private placement warrants pay off only on successful deals. Other similarities named by Gahng et al. (2021) include how sponsors and GPs both are involved in the post-deal companies as members of their boards, although the GP has a longer search period and longer post-deal involvement. Despite differences in defining the sponsor promote as carried interest or management fees, both Rodrigues and Stegemoller (2012) and Gahng et al. (2021) discuss strong incentive set forth by the sponsor promote to pursue a merger at any cost. Paired with the lack of reputational constraints in the “one-shot deal” SPAC environment, the sponsor can profit from deals that are harmful to SPAC investors.

**Reputation**

Rodrigues and Stegemoller (2012) explain how voice and exit are two ways that SPACs use to discipline managers that deviate from the PE structure. Voice is given to investors with the vote to approve the merger and the redemption conversion threshold in SPACs. PE LPs do not have any real voice; investment decisions are made by the GP. SPACs provide an exit with redemption rights and publicly traded stock that can be easily sold. PE fund investors can choose
not to commit capital at a later stage, but this is a weak disciplinary right because it damages the reputation of the investor as they may be blocked from future funds if they are known for causing difficulties. Rodrigues and Stegemoller (2012) emphasize how reputation is a significant aspect of PE funds. Though funds do not have voice and exit as SPACS do, the reputational concern of managers acts as a disciplinary constraint. Fund managers do not exploit the companies they invest in because it will reflect poorly on their managerial ability and cost them future investments. PE managers form larger and larger funds based on the reputation and performance of the previous fund. If managers are unattractive to investors they will not garner enough capital to continue to create funds. PE investors are also subject to reputational constraints. They do not want to threaten to pull future investments at a current fund for fear of being blocked from investing in other PE funds if they are known for causing trouble at a previous fund.

SPACs do not need reputation to protect investors because the trust value protects them instead. Changes to the SPAC structure regarding voice and exit in SPACs were implemented after “greenmailing” from hedge funds. The conversion threshold was raised to prevent opportunism from hedge funds, eliminating voice. To compensate, the amount in the trust has increased to provide a safer investment. If too many shareholders redeem, the low trust value will be unattractive to the target company and they will be reluctant to merge with the SPAC. This safety mechanism has strengthened the influence of exit. The uncertainty of a high number of redemptions is an effective way to discipline sponsors. This disciplinary constraint is useful for SPACs as reputational constraints present in PE are not present. SPACs are a one-shot deal. Sponsors are not confined by the reputation needed to create PE funds. As SPACs are a publicly traded vehicle, the reputation of SPAC investors does not hinder them from future investments.
The lack of reputational constraint on sponsors led to the shift of added “skin in the game.” Sponsors are expected to take on more risk capital in order to reap the benefits from a successful SPAC.

**Sponsor Agency Problem**

With added “skin in the game” from the sponsor, the agency problem from the promote is exacerbated. SPAC sponsors manage one SPAC searching for a single target to merge with, upon which hinges all of their compensation. The promote, private placement warrants, and potential PIPE investments will all expire worthless if no acquisition is completed. While this motivates a search for a quality target, it also creates an agency problem where the sponsor will seek any merger rather than none at all because all of their compensation is dependent on the merger.

Labeled as “perverse incentives” by Dimitrova (2017), they prevent sponsor motives from aligning with shareholders. The misalignment of sponsor motives is posited as the explanation for dismal SPAC returns. After the merger is completed, one-year post merger return had a mean of -41.0% with the market performing -1.3%. Dimitrova (2017) shows that the closer the completion of the merger is to the deadline of expiration and liquidation, the worse performance the company has in the future. An inverted-U relationship is found between the time it takes to find a target and SPAC performance. Increased time and due diligence lead to quality targets, but sponsors sacrifice quality during the narrowing window of opportunity to prevent losing their investment as the deadline approaches. The four-year post-SPAC IPO return is 8.8% lower if the acquisition is announced at the end of the timeline. Tran (2012) also recognized these perverse incentives, but posited that they were mitigated by long term institutional investors with large blocks of shares. Institutional blockholders act as monitors, keeping the sponsor in check to make a responsible investment. Dimitrova (2017) disagrees, finding higher ownership by
institutional blockholders negatively affects performance. Long run buy-and-hold returns are between 8.3 and 9.6 percentage points lower for every 10% increase in institutional ownership. The sponsor agency problem and perverse incentives create desperate sponsors that take what they can, despite the cost to investors.

In addition to the agency problem, the SPAC sponsor also serves two principles. The sponsor serves both the SPAC investors and the target company. The role the sponsor plays in negotiations was previously discussed, including how the sponsor pays PIPE investors inducements not to redeem and how the target company will set a cash requirement to ensure deal certainty. The target desires deal certainty in the amount of cash delivered, while the SPAC investors desire deal quality from an attractive target that does not invoke redemptions. When these two goals conflict, the sponsor cannot serve both. Gahng et al. (2021) mentions if redemptions are very high, the target may pay an inducement to investors in addition to the sponsor paying investor inducements. This is far from the cash certainty desired by the target, as cash uncertainty from redemptions is coupled with having to dilute their own shares. In the reverse scenario, redemptions are low and the SPAC share price rises. The rise in share price shows that negotiations between the SPAC and the target undervalued the quality of the target and set too low of a price. A lower valuation of the target dilutes target shareholders by creating an unfair merger exchange ratio. When target shares are exchanged for shares in the acquiring company, a lower target share price results in target shareholders receiving a lower number of shares in the acquiring company, diluting their ownership. Since a rising SPAC share price benefits SPAC shareholders at the cost of diluting target shareholders, the target shareholders will receive inducements rather than pay them. The goals of the target and the SPAC
shareholders are in conflict because the SPAC shareholders would have profited from underpaying for shares.

Klausner et al. (2020) presents a “sponsored IPO” that solves the issues that result in the dilution causing poor post-merger performance. The motivation behind the agency problem, the promote, is a large source of dilution in the post-merger company. Dilution from the sponsor promote and warrants as well as poor deal quality from the agency problem are both sources of poor long-term SPAC returns. This poor performance is to be discussed in the following section and is presented in a table of returns in Appendix B. The sponsored IPO follows the process of a traditional IPO but adds the expertise, certification, and reputation from a SPAC sponsor. First the sponsor seeks out a target and third-party private placement investors, then once they are found the IPO will take place. The PIPE investors would perform due diligence before investing and the sponsor would perform negotiations with the target, same as with a SPAC. Since the sponsored IPO is an IPO and not a SPAC, there is no need for a fund, and therefore no dilution cost from the promote and warrants endemic to SPACs. Only after finding the target and negotiating acceptable cash and equity terms will the sponsor raise funds, providing certainty for the target and preventing the misaligned sponsor incentives of choosing between pushing a bad SPAC deal or losing all of their compensation. Klausner et al. (2020) explain that the sponsor and company management could be issued warrants with strike prices similar to earnout prices today, meaning these warrants would only be exercisable once the public company reaches certain share price milestones above the IPO issue price. They believe that the primary reason sponsored IPOs are not utilized is because SPACs are an established and standardized process.

4. Empirical Evidence
This discussion of SPAC research results will cover various functions of SPAC structure, including factors affecting the success of the SPAC IPO, the merger approval, and long term returns post-merger. These long-term returns can be compared to returns from companies that have completed traditional IPOs since the merger accomplishes the goals of an IPO for the SPAC target company. Long term returns have been used to compare SPACs to the blank check scams of the 1990s and to accuse sponsors of taking advantage of the SPAC process to enrich themselves. Long term returns are some of the most significant findings post-merger and have been widely found as negative.

**The SPAC Market**

SPAC period milestones and characteristics have been heavily compared to traditional IPOs as the SPAC merger parallels traditional IPOs in function. Rather than focus on advantages they may or may not have compared to traditional IPOs, Bai et al. (2021) place SPACs in a new category of going public. SPACs are an opportunity to access the public market for firms that can provide value but pose risk to underwriters. Bai et al. (2021) label firm quality as Good or Bad and riskiness as Good or Safe. SPACs are the result of a segmented market where underwriters will only take Good/Safe firms public, as Good/Risky firms have too many liabilities. These Good/Risky firms prefer SPACs because their higher risk translates into higher costs with a traditional IPO. Bai et al. (2021) continue to explain that these value-creating risky firms appeal to yield-seeking investors. SPACs provide access to public markets for companies that are able to provide returns but are too risky for traditional underwriters to take on as an IPO.

Blomkvist and Vulanovic (2020) examine the SPAC waves since their modern induction in 2003. They find that these SPAC waves are inversely related to VIX which is the volatility index and VRP which is variance risk premium. VIX and VRP measure volatility and uncertainty.
During uncertain times investors are risk averse and move away from SPACs due to their lack of transparency. On the other hand, SPAC waves are positively linked to sponsor “skin in the game”. Bai et al. (2021) have related findings, overall market sentiment measured by VIX has an insignificant influence on SPAC activity. Equity market sentiment is strongly positively correlated with SPAC volume, explaining 35% of the variation in the number of SPACs. Credit market sentiment is negatively correlated and insignificant. Bai et al. (2021) explain that these results follow their hypothesis, that SPACs cater to yield-seeking investors and therefore an increase in yield-seeking investors contributes to the rise of SPACs.

The reception to the popularity of SPACs and the perception of their quality has not been uniform. Klausner et al. (2020) titled their research A Sober Look at SPACs. While studying a merger cohort from 2019-2020, they find SPACs have higher costs than IPOs, misaligned incentives, losses for shareholders at the time of mergers, and substantial dilution for investors who hold their shares through the merger. In contrast to this study, SPAC practitioners Bazerman and Patel (2021) tout the positives of SPACs. Higher valuations, less dilution, speed, more transparency, lower fees, and fewer regulations are reported in comparison to the traditional IPO. They explain that the market has changed drastically since 2019, the time of Klausner et al. (2020)’s study. They argue the current environment has improved sponsor teams. Bazerman and Patel (2021) state that post-merger SPACs have outperformed the S&P 500 measured from January 2020 through the first quarter of 2021, SPAC up 47% and the S&P 500 up 20%. This has been the only positive return attached to SPAC shares post-merger. Other than Bazerman and Patel (2021), the vast majority of SPAC studies discussed in this literature found negative returns for SPAC shares. SPACS have underperformed their IPO counterparts as well as the broader market.
**SPAC IPO**

Research on the start of the SPAC period, the SPAC IPO, is performed by Dimic et al. (2020) studying the determinants of SPAC IPO withdrawals. When corporations announce an IPO but cannot find the desired funding, they withdraw and do not go public. Dimic et al. (2020) found that characteristics from both the IPO prospectus and the market determine withdrawals. The likelihood of withdrawals is directly related to the level of volatility on the day of the IPO or withdrawal. SPACs have a harder time finding investors if the market is uncertain. A stated intention to find a Chinese target company decreases the likelihood of withdrawal. If the underwriter syndicate is centered around EarlyBirdCapital, the investment bank that started the SPAC market, withdrawal is less likely since the SPAC market is a specialized niche market. The likelihood of IPO withdrawal decreases with larger SPACs, a narrowed focus, a large number of underwriters in the syndicate, and legal counsel specialized in the SPAC market.

**Merger Approval**

Research on factors affecting the success of a SPAC merger delves into what influences a merger and does not consider returns in the post-merger company, focusing on the SPAC period only. Moving forward from the IPO, Lakicevic et al. (2013) and Cumming et al. (2014) examine factors affecting the SPAC merger. Lakicevic et al. (2013) find that the number of SPAC founders increases merger approval because a higher number of SPAC founders provides a greater knowledge. Higher VIX, a measure of volatile markets, increases merger approval because it increases investor willingness to invest in a SPAC as a substitute for assets that underperform during volatile markets. An outlined focus in the SPAC prospectus and a focus on China both increase the likelihood of approval. The involvement of EarlyBirdCapital as an underwriter increases the likelihood of a merger, the SPAC market is a niche market that
originated from EarlyBirdCapital. A merger announcement made further from the IPO and closer to the end of the time limit has a negative impact on the likelihood of a merger. A study by Cumming et al. (2014) also looked into factors affecting merger approval. Younger management teams with a higher degree of passion and drive to establish their reputation increase merger approval. A higher trust value signals quality and improves merger approval, but also is an incentive for investors to redeem when the vote is near the end of the SPAC time limit. Low syndication, or number of underwriters, signals less risk and increases merger approval probability whereas high syndication occurs when underwriters desire to spread out the risk between multiple actors. An up-trending market increases the likelihood of approval. The presence of a “glamor” underwriter, a well-reputed investment bank, increases the likelihood of approval if they are lead underwriter. The presence of a glamor underwriter decreases deal approval probability when they are not the lead due to concern that their presence is merely educational, to learn from a specialized SPAC underwriter, not because they found a good investment opportunity. Large blocks of shares owned by active investors such as hedge funds and private equity funds decrease deal approval probability while deal probability increases from higher voting rights held by the SPAC manager.

**Post-Merger**

Post-merger, the target company begins trading publicly, just like a traditional IPO. Vulanovic (2016) studies this post-merger period, examining survival rates, determinants of failure, and post-merger performance which will be discussed further in this section. Post-merger survival is positively impacted by sponsor warrant purchases at IPO, higher underwriter involvement, and larger size of underwriter syndicate. Interestingly, the underwriter syndicate has been described in both a positive and negative light. Vulanovic (2016) describes underwriter
syndicate as a positive force, a larger network of resources improving survival post-merger, while Cumming et al. (2014) saw lower syndication improve merger approval likelihood, viewing a large number of underwriters as a sign of risk.

There have been many studies of SPAC share returns post-merger, each with varying time horizons and measures of return. Jog and Sun (2007), the first paper on modern SPACs, find negative 3% annualized abnormal returns for shareholders yet about 1,900% for management. This number is so high because it is measured starting from the SPAC IPO, when management invests a nominal amount. Rather than just return on share value, management return is scaled by the amount management paid for shares. After their research, SPACs changed with added sponsor risk capital “skin in the game.” In order to merit this high return, investors are protected with a higher trust value. Even after this transformation, SPACs are described as value destroying. Jenkinson and Sousa (2011) find an average cumulative return of -55% after one year. They propose a strategy that performed in line with the market six months after acquisition. This strategy is to invest in SPACs with a share price above the trust value, dubbed Good SPACs, and avoid Bad SPACs with a price below the trust value. Kolb and Tykvova (2016) depict SPACs as “frogs that do not turn into princes,” explaining how low-quality firms are drawn to SPACs, creating a value-destroying asset with a buy-and-hold average market adjusted one-year return of -46%. A detailed table of post-merger returns with the aforementioned data and additional research is available in Appendix B. Bazerman and Patel (2021) are the only researchers to report market outperformance. They posit a changed SPAC environment with lower warrants, lower redemptions, and better performance.

Those who view SPACs skeptically find many hidden costs in SPACs, such as dilution to existing shareholders, as the reason behind poor returns. Short term SPAC period investors such
as hedge funds may be able to find a profit selling shares before the merger, but holding shares through the merger or investing in the post-merger period produced dismal returns. Mentioned above, Jenkinson and Sousa (2009) found that investors could capture the risk-free return that hedge funds seek after by using a strategy following market reactions. This research was from the tail end of the first wave of modern SPACs, and since then the SPAC environment has shifted. Recent data from Gahng et al. (2021) finds the average one-year buy-and-hold return of the post-merger company is -15.6%, and relates this negative return to dilution found by Klausner et al. (2020), that SPACs only deliver $6.67 per share rather than $10 per share. Redemptions, underwriting fees, promote, and future warrants drag down returns as they dilute share value.

One positive performer seems to be warrants. Lakicevic and Vulanovic (2013) found warrant holders had significant abnormal returns on the merger announcement day of 10.49% while common stock only reacted mildly with 2.42% abnormal return on the merger announcement day. This strong positive reaction from warrants seems to be reinforced with long term returns. Gahng et al. (2021) report that warrants significantly outperform common shares. The one-year equally weighted buy-and-hold-return for warrants is 44.3%, contrasting the -15.6% common share return.

Gahng et al. (2021) find a clear relation between high dilution and underperformance during the post-merger period, which they coin the deSPAC period. Additionally, they find that a high redemption ratio also predicts deSPAC period underperformance. Klausner et al. (2020) find that the primary hidden costs of the SPAC merger are from dilution. Vulanovic (2016) finds the average outside SPAC investor experiences initial share dilution at IPO of 35.31%. This dilution comes from in-the-money warrants and the 20% equity given to SPAC sponsors.
Klausner et al. (2020) say that the high return redeeming investors enjoy is at the cost of non-redeeming investors, namely the SPAC shareholders holding their shares through the merger. The hole created by dilution can only be filled via sponsor quality, as a quality sponsor can select a better target, reduce redemptions, and attract PIPE investments, which all reduce dilution. Lin et al. (2021) also views quality sponsors as a way to make up value from the dilution loss. They cite the safe harbor provision as the reason behind poor performance rather than dilution, as this provision allows poor quality firms to come through.

Dimitrova (2017) discuss how large blocks of shares owned by institutional investors, institutional blockholding, has a negative effect on performance. They find an 8.3 to 9.6 decrease in percentage points of returns for every 10% increase in institutional blockholding. Institutional investors are primarily hedge funds, who invest during the SPAC period with short term goals and most exit before the post-merger period. Owning 29% at the SPAC IPO, 20% at merger completion, and 13% one-year post-merger, the exit from institutional blockholders puts a downward pressure on price explaining their negative effect on returns.

5. Recent Updates

While this literature review has so far presented a bird’s eye view of SPACs, recent shifts have occurred in the SPAC market. The 2020-2021 SPAC surge has died down, and the performance of previous mergers have been controversial. SPACs have become more well known, attracting celebrity sponsors and retail investors, and invoking criticism from politicians. Changes to the SPAC structure have begun to shift even further, along the terms proposed by Gahng et al. (2021).

The number of SPACs in 2020 totaled 248, raising $83.4 billion in proceeds, surging in popularity that continued into the beginning of 2021, so far 527 SPACs have raised $144.2
billion in proceeds. SPACs have hit their highest numbers ever in 2021, yet they are already in decline. The number of SPAC IPOs peaked at 141 in February, compared to just five in August.

SPACs have changed from their origins. Once a way for small companies to access the public market, SPACs now have huge valuations from companies with little revenue projecting high growth in the future. For example, the largest three deals that closed in 2021 were Churchill IV acquiring Lucid Motors for about $19 billion, Soaring Eagle Acq. acquiring Ginkgo Bioworks for about $15 billion, and Gores IV acquiring United Wholesale Mortgage for about $15 billion. These massive deals have become more common in the recent SPAC market.

SPACs are often used to take advantage of a favorable market, Bazerman and Patel (2021) say the new SPAC environment is focused on disrupting consumer, technology, and biotech markets. Since SPACs are thought of as a faster IPO, and have the capability to be quicker when framed from the perspective of the target company, companies in hot industries can take advantage of a favorable market and IPO while their company is in the spotlight and interest is high. Archer, which seeks to create autonomous electric flying taxis, announced a SPAC merger and it will “arrive on public markets before establishing such business basics as commercially ready technology.” This is unlike the PE method of raising funds over many years that private companies have traditionally followed before going public.

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3 After peaking in February 2021 with 141 SPACs, enthusiasm has faded with only five in August and existing SPACs struggle to make deals. SPAC prices have leveled. “The SPAC Bubble is Burst. It May be Time to Invest.” WSJ. https://www.wsj.com/articles/the-spac-bubble-is-burst-it-may-be-time-to-invest-11631619621?mod=Searchresults_pos2&page=5
5 Archer Aviation Inc. announced a SPAC merger raising $1.1 billion at a $2.7 billion valuation. Traditionally startups of this nature with little revenue or commercially ready technology go through years of venture capital funding before going public. “SPAC Frenzy Emboldens Silicon Valley Startups to Forgo Venture Funding.” WSJ. https://www.wsj.com/articles/spac-frenzy-emboldens-silicon-valley-startups-to-forgo-venture-funding-11614344154?mod=Searchresults_pos13&page=10
Despite this there has been criticism of SPACs, senators including Elizabeth Warren have sent letters to notable SPAC founders asking about compensation and conflicts of interest. While SPACs have allowed some companies to go public that are now performing poorly, there have also been some extreme successes. Tales like Nikola lead investors to caution against the types of companies SPACs bring public. Nikola is an electric truck startup where founder Trevor Milton resigned after allegations of deceiving investors, including a video of a prototype that appeared to be moving of its own power was actually rolling downhill. Virgin Galactic, a spaceflight company, sent its founder on a successful test flight, a step towards its vision of space tourism. Examples like Virgin Galactic fuel the SPAC hype, despite the early stages of its progress and the risks involved.

SPACs in 2021 have drawn attention in the news and media. With the huge numbers during the height of the surge, public figures and celebrities sponsored SPACs including former House Speaker Paul Ryan and former professional basketball player Shaquille O’Neal. As discussed above, SPAC period or pre-IPO investors are putting money into a shell, essentially investing in the sponsor and management team. Because of this, sponsors are often well-reputed in the finance world and have the wealth and connections to find a desirable target. The largest SPACs tend to be founded by sponsors with experience and repute in the finance industry, who often become serial SPAC sponsors. Some high-profile SPAC sponsors include Bill Ackman the founder of Pershing Square Tontine Holdings (PSTH), Chamath Palihapiya the founder of Social Capital Hedosophia and its six SPACs, and Michael Klein the founder of four SPACs

Elizabeth Warren and three other senators, members of the Senate Banking Committee, sent open letters to six SPAC creators in the name of protecting investors and market integrity. These letters asked about compensation and conflicts of interest in SPAC deals. “Elizabeth Warren, Other Top Democrats Raise Concerns About SPAC Incentives.” WSJ. https://www.wsj.com/articles/elizabeth-warren-other-top-democrats-raise-concerns-about-spac-incentives-11632339583?mod=Searchresults_pos1&page=4
under the name Churchill Capital. Famous names and reputation do not always guarantee SPAC success. Despite launching the largest SPAC ever at $4 billion, Ackman’s proposed deal for PSTH to acquire Universal Music Group was not completed, facing regulators and a lawsuit from investors. The SEC ruled that it did not meet the requirements for a SPAC as Ackman had created an unconventional deal where PSTH would buy a 10% stake, rather than acquire the whole company to take it public. Ackman now seeks to create a new structure, a SPARC or Special Purpose Acquisition Rights Company, where investors are first propositioned with the deal and then would have the right to buy in and invest their money. Whether or not the SPARC is approved, SPACs will continue to shift as time passes, and the next SPAC wave may arrive with a new structure altogether.

6. Conclusion

The recent SPAC surge of 2020-2021 has been a new phenomenon in the world of SPACs. They have gradually developed out of blank check companies to the modern SPACs of the 2000s. As sponsors contributed more ‘skin in the game,’ PIPE investments were added, and thresholds increased, SPACs became what they are today. SPACs today are larger in size and IPO share, with increased public knowledge. Yet research is still behind in incorporating data, as it will be due to the nature of the SPAC life cycle.

The contributing factors to merger success and returns have shifted over the years with some debate. Sponsor quality stands out as a strong attribute, as does the level of dilution. No research has thoroughly investigated the effects of dilution until recently. In this literature review I have

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provided a comprehensive overview of the SPAC market, focusing on recent research while incorporating content from the past.

Gahng et al. (2021) states that the SPAC environment has changed over time to become friendlier to investors. Warrants have shrunk, and underwriter spread, once stuck at 7% as reported by Rodrigues and Stegemoller (2014) has come down to the 5.5% reported by Gahng et al. (2021). Markets are more efficient in realizing SPAC abnormal returns, and warrants have shrunk with high investor demand. There are many facets of the SPAC market that are not well studied. Reasoning behind what factors caused SPACs to shoot up in popularity so quickly in 2020 has many hypotheses but no further research. The share exchange ratio of the merger and dilution of target shares are unexplored. There are questions about serial SPAC sponsors and what drives their success. Further research is needed as the SPAC environment is still changing.
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Appendix A

Virgin Galactic Timeline

Virgin Galactic went public via a SPAC named Social Capital Hedosophia Holdings Corp. Its sponsors have gone on to create more SPACs after the success of the Virgin Galactic merger. Virgin Galactic filed its S-1 Initial Prospectus, as the SPAC Social Capital Hedosophia Holdings Corp. (“SCH”) on August 23, 2017. Its shares were approved by the SEC on September 12, 2017. It filed its 8-K on September 14, 2017 as it had its IPO. For $10.00 per unit, SCH sold 60,000,000 units for proceeds of $600,000,000. Units included one Class A share and one third of one warrant, with an exercise price of $11.50. The sole underwriter, Credit Suisse, had a commission of $0.52 per $10.00 unit or 5.2%. SCH had $0.35 per unit or 3.5% set aside as the deferred underwriter commission, paid only on completion of a business combination.

SCH had two sponsors, represented legally as a “sponsor” corporation. SCH was founded as a partnership between Chamath Palihapitiya and Ian Osborne. They have extensive experience and connections with technology, executives, VC, and growth fund managers. The SPAC managers of SCH had existing network centrality and reputation. After the success of the Virgin Galactic merger, Palihapitiya became a serial sponsor and is known as the “SPAC King” as he has currently sponsored six SPACs. The SCH sponsor received a promote. The sponsor paid a nominal $25,000 for 20% of shares. The sponsor purchased an additional $12,000,000 in private placement warrants to cover costs, further establishing “skin in the game.” Because of the private placement, the trust held 100% of its value. SCH had a timeline of 24 months. After its IPO on September 14, 2017, several institutional stakeholders purchased shares in SCH.

SCH had a specified interest in disruptive technology looking for innovative and disruptive companies. Virgin Galactic was a space tourism company, which fit the industry profile. The
merger was announced on July 9, 2019. The shareholders held a vote and approved the merger. The merger between SCH and Virgin Galactic was completed on October 25, 2019, 22 months after the SPAC IPO.
Appendix B

Data Table of Empirical Findings: SPAC Returns

<table>
<thead>
<tr>
<th></th>
<th>1 month</th>
<th>3 months</th>
<th>6 months</th>
<th>1 year</th>
<th>2 years</th>
<th>5 years</th>
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</thead>
<tbody>
<tr>
<td><strong>SPAC Period and SPAC IPO Return</strong></td>
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<tr>
<td>SPAC IPO Average BHAR (IPO proceeds-weighted) from Jan. 2010-May 2018 Gahng et al. (2021)</td>
<td></td>
<td></td>
<td></td>
<td>9.3%</td>
<td>(10.6%)</td>
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<tr>
<td>Median Return from IPO day to Outcome day to Shareholders (SPAC period return) from 2003-2006 Jog and Sun (2007)</td>
<td>-3%</td>
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<td><strong>SPAC Period Return to Sponsor</strong></td>
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<tr>
<td>Median Return from IPO day to Outcome day to Managers (SPAC period return) from 2003-2006 Jog and Sun (2007)</td>
<td>1900%</td>
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<tr>
<td><strong>Post-Merger Share Return</strong></td>
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<tr>
<td>Post-merger BHAR from 2003-2020 Lin et al. (2021)</td>
<td></td>
<td></td>
<td></td>
<td>-26.64%</td>
<td>-29.99%</td>
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<td>Post-merger Average BHAR (value-weighted) from Jan. 2010-Sept. 2020 Gahng et al. (2021)</td>
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<td></td>
<td>-15.6%</td>
<td>(-4.0%)</td>
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<tr>
<td>Post-merger Average (Median) Return for 2019-2020 Merger Cohort Klausner et al. (2020)</td>
<td>-2.9%</td>
<td>-12.3%</td>
<td>-34.9%</td>
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<tr>
<td>Post-merger Average (Median) Return in Excess Over IPO Index for 2019-2020 Merger Cohort Klausner et al. (2020)</td>
<td>-13.1%</td>
<td>-33.0%</td>
<td>-47.1%</td>
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<td>Post-merger Average (Median) Return from 2004-2010 Dimitrova (2017)</td>
<td>-41.0% (-58.9%)</td>
<td>-56.3%</td>
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<td>Market Adjusted BHAR from 2003-2015 Kolb and Tykvova (2016)</td>
<td>-29.00%</td>
<td>-46.00%</td>
<td>-59.00%</td>
<td>-102.00%</td>
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<tr>
<td>Overall Average BHAR from 2003-2013 Vulanovic (2016)</td>
<td>-3.00%</td>
<td>-19.00%</td>
<td>-40.00%</td>
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<tr>
<td>Surviving SPAC Subcategory BHAR from 2003-2013 Vulanovic (2016)</td>
<td>-26.00%</td>
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<td>Failed SPAC Subcategory BHAR from 2003-2013 Vulanovic (2016)</td>
<td>-50.00%</td>
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<td>Average BHAR for Subsample of Completed Merger as of 2009 Lakicevic and Vulanovic (2013)</td>
<td>-28.69%</td>
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<td>Average Annual Excess return for Merger Completed Firms from Aug. 2003-June 2008 Lewellen (2009)</td>
<td>-36.5%</td>
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**Post-Merger Warrant Return**

| Post-merger Warrant Average BHAR from Jan. 2010-May 2018 Gahng et al. (2021) | 44.3% (15.6%) |