A Sober Look at SPACs

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Special Purpose Acquisition Companies (SPACs)—touted as a better alternative to an IPO for taking a company public—have become the next big thing in the securities markets. This Article analyzes the structure of SPACs and the costs embedded in that structure. We find that costs embedded in the SPAC structure are subtle, opaque, higher than has been previously recognized, and higher than the cost of an IPO. Although SPACs raise $10.00 per share from investors in their IPOs, by the time a SPAC merges with a private company to take it public, the SPAC holds far less in net cash per share to contribute to the combined company. For SPACs that merged during our primary sample period of January 2019 through June 2020, mean and median net cash per share were $4.10 and $5.70, respectively. Between June 2020 and November 2021, net cash per share was somewhat higher but far below $10. We find that SPAC costs are not borne by the companies they take public, but instead by the SPAC shareholders who hold shares at the time SPACs merge. These investors experience steep post-merger losses, while SPAC sponsors profit handsomely. This Article concludes by suggesting that the SEC promulgate disclosure requirements specific to SPAC mergers that make clear SPACs' costs and sponsors' incentives, and that equalize regulatory preferences that SPACs enjoy compared to IPOs.

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Introduction

Special Purpose Acquisition Companies, or "SPACs," have attracted unprecedented attention in the past few years as a means of taking a company public. A SPAC raises cash through an IPO and then has two years to search for a private company with which to merge and thereby bring public. It is organized and managed by a sponsor, which may be associated with a private equity or hedge fund, or it may simply be an individual or group of individuals. Especially more recently, a sponsor may be affiliated with an enterprise that is devoted solely to forming and managing SPACs. When a SPAC enters into a merger agreement with a target, the SPAC's shareholders have an option to redeem their shares rather than participate in the merger. Hence, IPO investors bear no downside risk. If a SPAC fails to complete a merger within its lifespan of typically two years, it liquidates and returns all funds to its shareholders with interest.

Once considered a "backdoor" to the public markets for companies unable to access the traditional IPO market, over the past three years, SPACs have gone mainstream—with a bang.[1] Figure 1 shows their growth over the past decade. In both 2020 and 2021 (through November), SPAC IPOs accounted for more than half of total IPOs, and among firms that went public in those years, SPAC mergers accounted for roughly 22% and 34%, respectively.[2] SPAC IPOs raised more cash in 2020 than over the entire preceding decade combined, and as of November 2021 they have already raised more than in all of 2020.[3] Moreover, in contrast to the past, companies with the option of going public in a traditional IPO have instead chosen to go public through a SPAC. SPAC proponents regularly assert that a merger with a SPAC is a cheaper means of going public than an IPO.[4] At the same time, however, some commentators as far back as

1. *E.g.*, Alexander Osipovich, *Blank-Check Boom Gets Boost from Coronavirus*, WALL ST. J. (July 13, 2020, 4:49 PM), https://www.wsj.com/articles/blank-check-boom-gets-boost-from-coronavirus-11594632601 [https://perma.cc/A6PY-4VB8]; Jacob Rund & Andrea Vittorio, *'Blank Check' Companies See Revival as Big Names Embrace Trend*, BLOOMBERG LAW (July 23, 2019, 5:28 AM), https://news.bloomberglaw.com/corporate-governance/blank-check-companies-see-revival-as-big-names-embrace-trend [https://perma.cc/ACP4-U8UK].

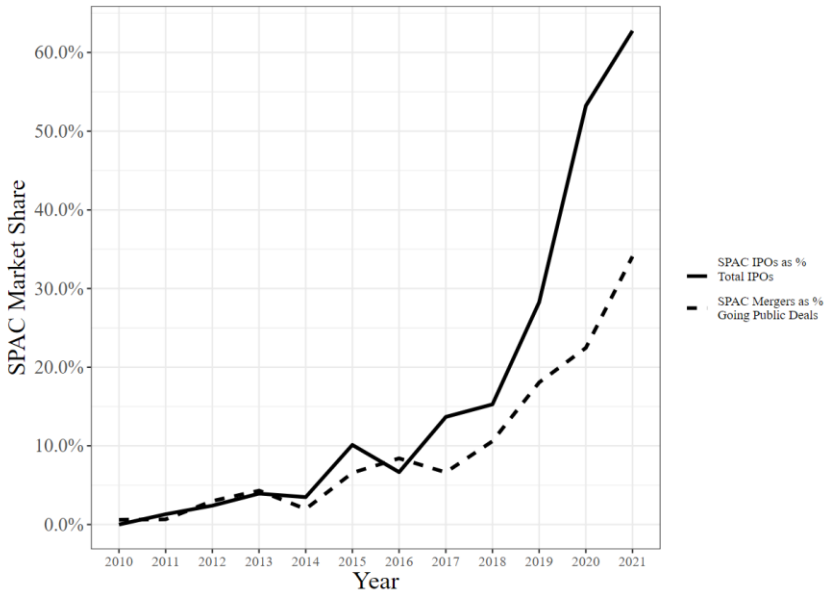
2. SPAC INSIDER, https://spacinsider.com/ [hereinafter SPAC INSIDER] [https://perma.cc/VPP3-Y7ZR]; SECURITIES DATA COMPANY (SDC) PLATINUM [hereinafter SDC PLATINUM]; IPO SCOOP, https://www.iposcoop.com/ [https://perma.cc/897Q-8ZLG].

3. SDC PLATINUM's database of new issues, *supra* note 2; SPAC INSIDER, *supra* note 2. In counting U.S. IPOs, we ignore very small ones that raised less than $40 million. The total money raised among these very small IPOs is quite small, meaning they have a negligible impact on SPACs as a percentage of total U.S. IPO funding.

4. *See, e.g.*, Ortenca Aliaj, Sujeet Indap & Miles Kruppa, *Can SPACs Shake Off Their Bad Reputation?*, FIN. TIMES (Aug. 12, 2020), https://www.ft.com/content/6eb655a2-21f5-4313-b287-964a63dd88b3 [https://perma.cc/EHB9-625T] (quoting venture capitalist Bill Gurley as saying "[c]learly, the rampant and worsening underpricing of IPOs has created a huge arbitrage opportunity for Spacs"); *see also* Nicholas Jasinski, *Why Nikola Decided to Merge with a SPAC. And Why More Such Deals Are Coming*, BARRON'S (Aug. 2, 2020) ("[W]ith IPOs being so blatantly underpriced, SPACs are now clearly the cheaper alternative."), https://www.barrons.com/articles/why-nikola-decided-to-merge-with-a-spac-and-why-more-such-deals-are-coming-51596369610 [https://perma.cc/5UXF-WRMJ]; Paul R. La Monica, *Why 2020 Is the Year of the SPACs (And What the Heck is a SPAC?)*, CNN (Aug. 6, 2020, 12:36

early 2020 considered the interest in SPACs to be fueled by "hype"[5] focused on a few successful, highly visible SPACs.[6] In the period between the fall of 2020 and the spring of 2021, the hype hit a fevered pitch and the SPAC market inflated into a full-fledged bubble, only to dramatically deflate in the Spring of 2021.[7] Along with SPAC share prices, exuberance about SPACs reached new heights.

Figure 1: SPAC Market Share



PM), https://www.cnn.com/2020/08/06/investing/spacs-ipos-stock/index.html [https://perma.cc/6RQL-KJSN] ("Plenty of private companies would rather merge with a blank check firm than go through the time-consuming and expensive process of raising money through a more traditional initial public offering.").

5. *See, e.g.*, Emily Graffeo, *Former Goldman Sachs CEO Lloyd Blankfein Says a Wash of Free Money Is Creating 'Bubble Elements' Citing SPAC Market*, MKTS. INSIDER (Oct. 8, 2020, 12:21 PM), https://markets.businessinsider.com/news/stocks/stock-market-outlook-bubble-blankfein-spac-goldman-free-cash-fed-2020-10-1029663001 [https://perma.cc/JD9P-Q4X7]; Yoel Minkoff, *DraftKings CEO Calls for Calm Amid SPAC Market Hype*, SEEKING ALPHA (Aug. 30, 2020, 7:02 AM), https://seekingalpha.com/news/3609948-draftkings-ceo-calls-for-calm-amid-spac-market-hype [https://perma.cc/A9QE-TA2W]; Gillian Tett, Opinion, *Bubble Warning: Even College Kids Are Touting SPACs*, FIN. TIMES (Oct. 8, 2020), https://www.ft.com/content/e64c3e5e-b990-4904-adfe-139e41a5845b [https://perma.cc/443B-EBEK]; Ben Winck, *A New ETF Will Let Investors Participate in the Stock Market's $22 Billion Craze*, MKTS. INSIDER (Aug. 3, 2020, 1:33 PM), https://markets.businessinsider.com/news/etf/spac-ipo-new-etf-market-craze-blank-check-acquisition-companies-2020-8-1029462977 [https://perma.cc/8B3D-H7BZ].

6. For instance, Virgin Galactic received a great deal of press attention when it went public via SPAC in 2019. *See, e.g.*, Bob Pisani, *Virgin Galactic Deal Sparks Interest in an Obscure Investment Vehicle with a Spotty Track Record*, CNBC (July 9, 2019, 4:51 PM), https://www.cnbc.com/2019/07/09/virgin-galactic-deal-sparks-interest-in-an-obscure-investment-vehicle-with-a-spotty-track-record.html [https://perma.cc/P39Q-RZPV]. Other prominent firms to go public recently via SPAC have included DraftKings and Nikola Corp. *See, e.g.*, Jasinski, *supra* note 4. *See generally* Michael Farr, *SPACs Are the New Market Bubble*, CNBC (Oct 30, 2020, 2:15 PM), https://www.cnbc.com/2020/10/30/michael-farr-spacs-are-the-new-market-bubble.html **[**https://perma.cc/XDT3-KALJ] (analogizing the SPAC boom to the dotcom bubble).

7. We document this bubble in Part VII.

This Article provides the first analysis of the economics of third-generation SPACs, which first appeared in 2009.[8] We examine all forty-seven SPACs that merged, and thereby brought companies public, between January 2019 and June 2020—the period immediately prior to the SPAC bubble. In Part VII, we provide a "postscript" in which we separately consider SPACs that merged during and after the bubble of 2020-21 and address the comment we frequently heard in response to our pre-publication draft of October 2020: that "this time is different?" (We report that it is not.). We separately consider SPACs that merged during and after the bubble in 2021 to address the question "Is this time different?" (It is not.) We find that the SPAC structure—designed to support a circuitous two-year process from IPO to merger—entails costs that are subtle, opaque, and far higher than have been previously recognized. We further find that nearly all investors in SPAC IPOs redeem or sell their shares by the time of a SPAC's merger, leaving a new group of shareholders to bear the costs embedded in SPACs as they merge. Furthermore, the SPAC structure results in misaligned interests between its sponsor and the holders of SPAC shares at the time of a merger. Finally, we conclude that while most of the costs embedded in SPACs result in an allocation of surplus from nonredeeming SPAC shareholders to other parties to the SPAC transaction, there may well be net costs from a social perspective as well. Both to protect nonredeeming shareholders and to avoid these social costs, we conclude that regulatory reform is warranted.

A SPAC is formed by a sponsor, which engages an underwriter to issue shares to investors in an IPO. In exchange for their roles in establishing and supporting the SPAC, the sponsor, the underwriter, and the IPO investors receive generous compensation. The sponsor takes a "promote" of 20% of the SPAC's post-IPO shares for a nominal price; the underwriter receives a fee typically equal to 5.5% of IPO proceeds, which is typically not adjusted for later redemption of shares; and investors in the IPO receive free warrants along with their shares, which dilute the value of a SPAC's shares and provide the IPO investors with an 11.6% average annualized return between the date of the IPO and the date of the merger. The sponsor's essentially free shares and the IPO

8. For analyses of earlier generation SPACs, which were structured differently from today's SPACs, see, for example, Steven M. Davidoff, *Black Market Capital*, 1 COLUM. BUS. L. REV. 172 (2008); Derek Heyman, *From Blank Check to SPAC: The Regulator's Response to the Market and the Market's Response to the Regulation*, 2 ENTREPRENEURIAL BUS. L. J. 531 (2007); Daniel S. Riemer, *Special Purpose Acquisition Companies: SPAC and SPAN, or Blank Check Redux?*, 85 WASH. U. L. REV. 931 (2007); Usha Rodrigues & Mike Stegemoller, *Exit, Voice, and Reputation: The Evolution of SPACs*, 37 DEL. J. CORP. L. 849 (2013); and Yochanan Shachmurove & Milos Vulanovic, *Specified Purpose Acquisition Company IPOs*, *in* THE OXFORD HANDBOOK OF IPOS 301 (Douglas Cumming ed., 2019). Since this Article was first posted on SSRN in October 2020, two additional papers on SPACs by economists have been posted. *See* Jessica Bai, Angela Mai & Miles Zheng, Segmented Going-Public Markets and the Demand for SPACs (Sept. 23, 2021) (unpublished manuscript) (https://ssrn.com/abstract=3746490) [https://perma.cc/47DZ-AJKR] (examining differences in the characteristics of companies that go public via SPAC versus IPO); Minmo Gahng, Jay R. Ritter & Donghang Zhang, SPACs (July 23, 2021) (unpublished manuscript) (https://ssrn.com/abstract=3775847) [https://perma.cc/T9DD-PCBX] (confirming positive returns pre-merger and negative returns post-merger).

investors' free warrants dilute the value of the SPAC's shares, and the underwriting fees, and additional advisory fees that SPACs incur at the time of their merger, further deplete the SPAC's cash. SPAC redemptions then amplify the effects of dilution and dissipation of cash on a per-share basis.[9] As a result of these costs, by the time the SPAC merges with a target company, it has far less net cash per share than the $10.00 attributed to them in the SPAC's merger. We find that the median SPAC delivers only $5.70 per share in net cash in its merger,[10] which means a total of $4.30 per share has been extracted by the sponsor, the IPO investors, the underwriter, and various advisors.[11] In order for both holders of SPAC shares at the time of the merger and target shareholders to come out ahead on the deal, a merger must produce a surplus in value that fills the hole created by these costs. We find that, in most SPACs, this does not happen.

The costs embedded in the SPAC structure are far higher than costs associated with traditional IPOs. Companies that go public by merging with SPACs, however, have tended not to bear those costs. Instead, SPAC shareholders that choose not to redeem their shares in advance of a merger bear the costs and, as a result, unwittingly subsidize the firms they bring public. Overall, mean and median market-adjusted returns to nonredeeming SPAC shareholders as of November 1, 2021 are negative 64% and negative 88%, respectively. Moreover, those returns are highly correlated with net cash per share in a SPAC at the time of the merger. Companies merging with SPACs thus seem to be aware of the amount of net cash a SPAC will contribute to a merger, and therefore negotiate merger agreements in which the shares they give up are worth roughly the net cash they receive from the deal. There is variation, however, in the SPACs' costs and in returns to nonredeeming shareholders. We

9. Because the promote generally does not scale down in proportion to redemptions, redemptions reduce cash by an amount disproportionately greater than the reduction in shares. Redemptions also have no impact on the claims against the company represented by the warrants. Finally, the reduction in outstanding shares increases the per share cost of the underwriting fee. As we describe below, all of our calculations take account of redemptions net of new money brought in via private placements at the time of SPAC mergers, and any write-downs in compensation received by the SPAC sponsor or underwriter.

10. In the first draft of this paper posted on SSRN in October 2020, we found median cash per share to be $6.67. The decrease from $6.70 to $5.70 is primarily attributable to two changes. First, we now include financial advisory and other fees incurred in connection with a SPAC's merger. Second, following the SEC's recent guidance on warrants, we now treat warrants as a liability, reducing SPAC cash in the numerator of the cash-per-share fraction, rather than an equity instrument, which would increase total SPAC shares in the denominator. Statement of John Coates, Acting Director, Division of Corporate Finance and Paul Munter, Acting Chief Accountant, U.S. Securities Exchange Commission, Staff Statement on Accounting and Reporting Considerations for Warrants Issued by Special Purpose Acquisition Companies (Apr. 12, 2021) [hereinafter Statement of John Coates and Paul Munter] https://www.sec.gov/news/public-statement/accounting-reporting-warrants-issued-spacs [https://perma.cc/7T5U-3UEB].

11. The concept of net cash per share is central to our analysis. We define that term to be cash in the SPAC minus underwriting fees and other fees incurred in connection with a SPAC's merger minus the value of warrants as of the day before the announcement of the merger, divided by shares issued in the SPAC's IPO plus shares issued to PIPE investors. We follow the SEC's treatment of warrants as liabilities. If we treat warrants as equity of the same value in the denominator of net cash per share, the results would not be significantly different. For the few SPACs that have convertible debt, we treat the conversion feature as a warrant.

find that SPACs sponsored by large funds and former Fortune 500 executives tend to have lower costs, more net cash, and higher returns than do others.

The fact that nonredeeming SPAC shareholders bear the costs inherent in the SPAC structure explains the attraction of SPAC mergers to companies seeking to go public. From their perspective, going public by merging with a SPAC has been cheap—cheaper than an IPO. This, however, is not a sustainable situation. Some commentators credit SPACs with advantages over IPOs with respect to the certainty and speed of bringing a company public at a price known in advance. We find, however, that as a general matter these advantages are uncertain and greatly overstated. At some point, therefore—perhaps with the enhanced disclosure that we propose—we expect that SPAC shareholders will balk at bearing the costs imposed on them and at the associated losses on their investment.

Beyond SPACs' high costs, a second structural flaw is that sponsors' and management's incentives are poorly aligned with shareholder interests. The 20% promote, which sponsors share with management, allows each to reap large gains from a merger in which nonredeeming SPAC shareholders see the value of their shares drop.[12] We find that twelve months after the merger, during which time post-merger share prices have underperformed the market, the average sponsor returns are over $100 million. If the SPAC does not succeed in merging, it must liquidate and distribute all of its cash to its public shareholders. In that case, the sponsor receives nothing. This structural flaw has multiple ramifications. First, it provides strong incentives for sponsors to form SPACs. So long as a SPAC merges, the sponsor will do very well even if the SPAC shareholders do poorly. Second, once it has formed a SPAC, the sponsor has a strong incentive to merge, even in a deal that will be a losing proposition for shareholders. Third, when sponsors propose a merger to SPAC shareholders, they have an incentive to paint a rosy picture of the post-merger company.

The fact that nonredeeming SPAC shareholders have borne the costs inherent in SPACs, and have consistently seen negative returns as a result, raises questions regarding the quality of SPACs' disclosures. We find that SPACs are far less transparent than they could be with respect to their embedded costs. Moreover, the securities laws facilitate sponsors painting a rosy picture of the mergers they propose. Practitioners have interpreted the securities laws to provide SPACs with a safe harbor against liability in private actions under the securities laws for misstatements and omissions in financial projections and other forward-looking statements.[13] This safe harbor is not available to issuers going

12. As a legal matter, a SPAC is a corporation whose ultimate governing body is its board of directors. As a practical matter, however, the sponsor controls the SPAC. The sponsor, typically a separate corporate entity, appoints the SPAC's officers and directors, who are often individuals that control the sponsor or that have prominent roles with the sponsor. The sponsor typically compensates those individuals with shares from its promote. Therefore, for simplicity, we will describe the sponsor as controlling the SPAC, with an understanding that as a formal matter it does so through the SPAC's officers and directors.

13. *See* 15 U.S.C. §§ 77z-2, 78u-5 (2018).

public through an IPO. In addition, aside from projections and other forward-looking statements, when a SPAC brings a company public, there is substantially less liability risk for misstatements and omissions than in an IPO and, therefore, perhaps less due diligence. We propose that the SEC take action to require more clear disclosures of SPAC costs and to level the regulatory playing field, one way or the other, between SPACs and IPOs.

In Part I of this Article, we explain the SPAC structure and process, highlighting the embedded costs. In Part II, we analyze how the SPAC structure depletes the value of SPAC shares and misaligns incentives. In Part III, we show that holders of post-merger SPAC shares have borne the costs inherent in SPACs. In Part IV, we evaluate claims that SPACs are a better way to bring companies public than a traditional IPO or direct listing. In Part V, we explain how the benefits of SPACs can be integrated into IPOs and direct listings. In Part VI, we suggest ways in which SEC regulation could respond to the problems we have identified and make SPACs' costs more transparent to investors. Finally, in Part VII, we provide a "postscript" in which we discuss what has happened in the SPAC market since this Article was originally posted online in October 2020, and whether the experience with SPACs since that time supports the claim frequently made to us by SPAC practitioners about SPACs that went public or merged since we posted our paper: that "this time is different."[14]

I. What Is A SPAC?

A SPAC is a publicly held investment vehicle created to merge with a private company and thereby bring it public. That simple description, however, misses SPACs' complexity and hidden costs. In this Part, we describe the structure of SPACs, the process by which SPACs bring companies public, and the parties involved. In Part II, we quantify the costs embedded in the SPAC structure.

There are two separate transactions by which a SPAC brings a company public: the SPAC first goes public through its own IPO, and then some time thereafter merges with a private company. The merger brings the private company public and is typically combined with an additional capital raise. In Section I.A, we describe those transactions and explain that an investment in a SPAC at the time of its IPO reflects no commitment to remain invested in its eventual merger. In Section I.B, we present data showing that, empirically, nearly all investors in a SPAC's IPO exit their investment by the time of the merger, and that the SPAC engages in the equivalent of another roadshow to raise equity once it has proposed a merger. In effect, a SPAC merger is an IPO by the company with which it merges. We base the analysis in this Part and in the remainder of this Article on the cohort of all forty-seven SPACs that merged between January 2019 and June 2020 (to which we will refer as the "2019-20

14. *Cf.* CARMEN M. REINHART & KENNETH S. ROGOFF, THIS TIME IS DIFFERENT: EIGHT CENTURIES OF FINANCIAL FOLLY (2009).

Merger Cohort" or the "Cohort"). During this period, only six SPACs failed to merge and therefore liquidated.

A. The SPAC Structure and Process

The creation of a SPAC begins with a sponsor forming a corporation and working with an underwriter to take the SPAC public in an IPO. Sponsors are typically limited liability companies organized specifically for this purpose. The parties that organize sponsors range from large private equity, venture capital, or hedge funds, to former Fortune 500 executives, to individuals with no particularly relevant background. Nominally, the SPAC is managed by its own officers and directors, who are selected by the sponsor. Those officers and directors typically overlap with the individuals who own and created the sponsor, and the compensation of the SPAC's officers and directors typically aligns their interests with those of the sponsor.[15] So, as a practical matter, the sponsor is the manager of the SPAC, and throughout this Article we will refer to the sponsor as such.

Prior to the IPO, the sponsor acquires a block of shares at a nominal price that will be adjusted to amount to 25% of IPO proceeds or, equivalently, 20% of post-IPO equity. This block of shares, known as the sponsor's "promote," is the sponsor's compensation for setting up the SPAC and supporting the SPAC's management while the SPAC seeks a private company to take public. In some SPACs, the sponsor's interest increases automatically if additional equity is invested at the time of the SPAC's eventual merger.[16] In addition, concurrently with the IPO, the sponsor purchases SPAC warrants, shares, or both at prices the sponsor estimates to be their fair market value. The SPAC uses the proceeds of the sponsor's investment to cover the cost of the IPO and its operating expenses while searching for a merger target, and in some SPACs some of those proceeds are added to the trust in order to subsidize the return to IPO investors.

In its IPO, a SPAC sells units consisting of a share, a warrant, and in some cases, a right to acquire a fraction of a share at no cost when the merger closes. By convention, SPACs set prices of units at $10.00. Among the SPACs in the 2019-20 Merger Cohort, the number of shares that can be purchased with a warrant ranges from one-quarter of a share to one share, with an exercise price uniformly set at $11.50 per share and a term of five years. Fifteen SPACs in the Cohort issued units with rights exchangeable for one-tenth of a share if the SPAC consummated a merger. Across the 2019-20 Merger Cohort, IPO proceeds

15. *See* Michael Klausner & Michael Ohlrogge, SPAC Governance: In Need of Judicial Review (Nov. 19, 2021) (unpublished manuscript) (https://ssrn.com/abstract=3967693) [https://perma.cc/P5R3-W6AP]; Hunter Fortney, SPAC Attack: An Examination of SPAC Director Compensation and Its Legal Implications (Aug. 11, 2021) (unpublished manuscript) (https://ssrn.com/abstract= =3911337) [https://perma.cc/6WML-DZZ3].

16. Sponsors often waive this right when negotiating an eventual merger, but not always. For example, Mosaic Acquisition Corp and CF Finance Acquisition Corp did not.

ranged from $39 million to $690 million with a mean and median of $251 million and $220 million, respectively.

The proceeds of a SPAC's IPO are placed in trust and invested in Treasury notes. Under the SPAC's charter and the terms of the trust, cash in the trust can be used only to (a) acquire a company, (b) contribute to the capital of the company formed by the SPAC's merger, (c) distribute to shareholders in liquidation if the SPAC fails to consummate a merger, or (d) redeem shares, as discussed below. The SPAC's charter typically gives the SPAC two years to identify a merger target and to complete a merger. If the SPAC does not merge within the period provided for in the charter (or have its shareholders vote to extend its life by a few months), the SPAC must liquidate and distribute the funds in the trust to its public shareholders. In the event of a liquidation, the sponsor loses its investment.

A key feature of SPACs is that, when the SPAC proposes a merger, shareholders have the right to redeem their shares at a price equal to the $10.00 IPO price of the SPAC's units plus interest accumulated in the trust. The warrants and rights included in the units, however, remain outstanding and trade separately. Thus, investors in a SPAC's IPO can redeem their shares and keep their warrants and rights at no cost. The warrants and rights thus serve as compensation for the investors in the SPAC's IPO for allowing their cash to be used to set up the SPAC as a public company.

Even a SPAC with little cash remaining after redemptions can close a merger and bring a target company public.[17] The result is simply that nonredeeming SPAC shareholders own a small slice of the post-merger company and the target receives little cash. Merger targets commonly negotiate conditions of closing that require a minimum amount of cash in the SPAC following redemptions, though they frequently waive this condition at the time of the merger.

In some cases, the sponsor invests additional cash, and in others, target shareholders may invest. In addition, SPAC and target management actively market proposed mergers to potential investors, going on what are referred to as

17. Some post-merger companies struggle to meet stock exchange listing requirements for the minimum number of shareholders in a listed company. Nasdaq Rule 5505 requires at least 300 holders of round lots, defined as blocks of at least 100 shares. *Rulebook*, THE NASDAQ STOCK MKT., § 5505, https://listingcenter.nasdaq.com/rulebook/nasdaq/rules [https://perma.cc/R7F6-N2Q7]. NYSE Listed Company Manual § 102.01A requires at least 400 holders of round lots. *Listed Company Manual*, NYSE, https://nyseguide.srorules.com/listed-company-manual [https://perma.cc/V34N-HQ5Z]. For instance, Xynomic Pharmaceuticals Holdings, Inc, which merged with the SPAC Bison Capital Acquisition Corporation in May 2019 disclosed in November 2019 that it had received notice of non-compliance with Nasdaq's initial listing requirements for the minimum number of round lot holders. Xynomic Pharms. Holdings, Inc., Quarterly Report (Form 10-Q), at 5, 7 (Nov. 14, 2019). Nasdaq requires that post-merger SPACs re-certify compliance with initial listing requirements. *NASDAQ Reference Library: Identification Number 1416*, NASDAQ LISTING CTR. (Aug. 18, 2017), https://listingcenter.nasdaq.com/Material_Search.aspx?materials=1416&mcd=LQ&criteria=2&cid=34 [https://perma.cc/HPW9-73Q8].

"SPAC roadshows."[18] The roadshow has two objectives. One is to attract interest in the public market. As described below, a SPAC's initial investors generally exit by selling or redeeming their shares. SPAC sponsors much prefer that the IPO investors sell and thereby leave cash in the SPAC to be invested in the merger. Consequently, they devote considerable effort to developing interest among potential buyers of the SPAC's public shares. In some cases, sponsors make side agreements with investors that commit not to redeem their shares. The material terms of these agreements, such as consideration investors receive for not redeeming, are frequently not disclosed.[19]

The second objective of the SPAC roadshow (or in some cases a separate roadshow) is to attract private investment in the proposed merger. These equity infusions take the form of private investments in public equity, or "PIPEs," and are made concurrently with the merger. In some cases, SPACs line up PIPE investors at the time of their IPO with forward purchase agreements. Even where they have these commitments, however, they often seek additional PIPE investment. PIPEs may be made at a price of $10.00 per share—roughly the price public investors effectively pay by forgoing their redemption option—but in some cases PIPE investors pay a discounted price. A PIPE at a $10.00 price with no side payment from the sponsor can validate a transaction and attract public market investment and reduce redemptions. But, even in cases where the headline price of the PIPE is $10.00, sponsors sometimes subsidize PIPE investments by transferring their own shares or warrants to the investor.

Figure 2 summarizes the steps of a SPAC's lifecycle: (a) public investors buy units in a SPAC's IPO, the sponsor buys shares and/or warrants, and the sponsor receives 20% of the SPAC's post-IPO equity at a nominal price; (b) within two years, the SPAC proposes a merger by which a private company would go public;[20] (c) SPAC shareholders have the right to redeem shares; (d)

18. Chris Weekes, *SPACs Now Part of Conversation with Most Companies Seeking Public Listing: SPAC Roundtable Series*, COWEN INSIGHTS (Feb. 26, 2020), https://www.cowen.com/insights/spacs-now-part-of-conversation-with-most-companies-seeking-public-listing [https://perma.cc/76J4-USEK].

19. See, for example, a proxy statement issued by Chardan Healthcare Acquisition Corporation that disclosed several such transactions under the heading of "*Shareholder Agreements*." Chardan Healthcare Acq. Corp., Proxy Statement (Form DEFM14A), at 11 (Sept. 23, 2019). Health Sciences Acquisition Corporation disclosed similar arrangements under the heading of "*Other Agreements*." This disclosure notes: "As of the Record Date, HSAC [the Sponsor] had entered into voting agreements with holders of 4,547,000 HSAC Shares pursuant to which such stockholders . . . agreed to . . . not redeem or sell their shares. In addition, as of the Record Date, HSAC had entered into agreements with other investors that agreed to purchase up to 2,374,400 HSAC Shares at HSAC's request and not to redeem such HSAC Shares in connection with the closing of the Business Combination." Health Sciences Acq. Corp., Proxy Statement (Form DEFR14A), at 14 (Nov. 27, 2019). SPAC SEC filings do not always disclose material aspects of these transactions, such as the compensation provided in exchange for commitments not to redeem. Beyond these missing details, it is also not clear whether these arrangements themselves are always even disclosed. Therefore, we do not attempt a quantitative accounting of these agreements. Our analysis of the extent to which SPACs depend on new money coming into the SPAC at the time of the merger thus understates the extent of this phenomenon.

20. SPAC insiders sometimes refer to a SPAC's merger as a "de-SPAC." We will refer to it as the SPAC's merger.

contemporaneously with the merger, the sponsor itself and/or third parties purchase shares in PIPEs; (e) the merger proceeds; (f) the SPAC's remaining public shareholders own a typically small slice of the post-merger company's equity; and (g) the SPAC sponsor and third-party private investors similarly own small slices of the company's equity.

Figure 2: The SPAC Process

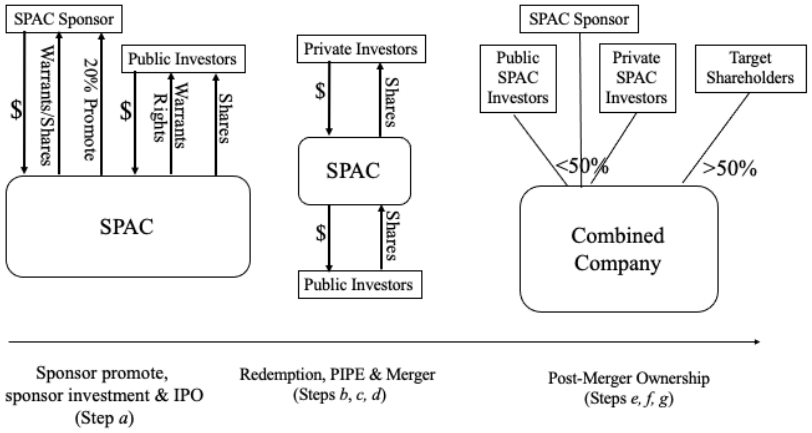


Table 1, below, provides data for each step in the SPAC process illustrated above based on our 2019-20 Merger Cohort.[21] To reduce the impact of extreme values, we present medians along with 25th and 75th percentiles rather than means. The median proceeds of a SPAC IPO are roughly $220 million, but at the median, 73% of those proceeds are returned to shareholders in redemptions. Much of the cash lost to redemptions is replenished in PIPE investments by either third parties or sponsors, but for most SPACs in the 2019-20 Cohort the replacement is partial. Of the cash a SPAC delivers in a merger, the median amount contributed by public investors is 64%, and the median contributed by third-party PIPE investors is 25%. Third-party PIPE investors buy in at a median discount of 5.5% to the purported $10.00 value of a SPAC share, and in 37% of SPACs with PIPE deals, the PIPE is at a 10% discount or more.[22] Following a

21. The data we present in this Article are partially based on data available on the SPAC Insider website. SPAC INSIDER, *supra* note 2. Most, however, is hand collected from SPACs' SEC filings. Some of these filings are highly opaque and at times inconsistent from filing to filing. While we did our best to ensure accuracy in what we collected and aggregate here, it is certainly possible that there were errors in our data collection. We are confident, however, that such errors would not have a material impact on the aggregate data that we report.

22. Note that median figures for components of a total (for example, total SPAC funding) cannot simply be added to calculate a figure for the median of the total. Thus, in Table 1, adding the median figures for percentage of cash contributed by public investors, percentage of cash contributed by third-party private investment in public equity (PIPE) investors, and percentage of cash delivered by SPAC sponsors does not add up to 100% of cash delivered.

merger, SPAC shareholders including the sponsor, hold a median of 35% of the company that has gone public, and the sponsor alone holds 12%. Thus, notwithstanding the "A" in their name, SPACs do not *acquire* companies. Instead, SPACs merge with private companies in transactions that typically leave the former SPAC shareholders and sponsors with minority interests in the merged company. Median post-merger market capitalization is $502 million. This is close to the $580 million median market cap for firms listed on the Russell 2000 Index in 2020.[23] One quarter of the mergers resulted in firms with market capitalizations of $955 million or more. Following 87% of SPACs' mergers, individuals designated by the sponsor take a position with the combined company, most commonly a board seat. In approximately one quarter of those combined companies, a designee of the sponsor becomes the board chair and, much less frequently, the CEO or other officer. How long they keep those seats remains to be seen.

Table 1: Overview of SPAC Cash Flows

	Median	**25th Percentile**	**75th Percentile**
IPO Proceeds ($M USD)	$220	$141	$328
Redemptions (% IPO Proceeds)	73%	18%	95%
Total Cash Delivered to Target in Merger ($M USD)	$152	$26	$353
Cash to Target as % IPO Proceeds	71%	16%	121%
Public SPAC Investors: % Total Cash Delivered	64%	28%	99%
3rd Party PIPE: % Total Cash Delivered	25%	0%	43%
Sponsor PIPE: % Total Cash Delivered	0%	0%	11%
Post-Merger Market Cap ($M USD)	$502	$321	$955
Post-Merger Shares (%) Held by All SPAC Shareholders (Including Sponsor)	34%	24%	50%
Post-Merger Shares (%) Held by Sponsor	12%	6%	15%

23. *Market Capitalization Ranges*, FTSE RUSSELL (May 8, 2020), https://www.ftserussell.com/research-insights/russell-reconstitution/market-capitalization-ranges [https://perma.cc/CC89-DGXH].

In sum, a SPAC provides a circuitous path to the public markets. The SPAC's IPO simply gets the SPAC established as a public company. The sponsor takes 20% of the SPAC's shares as compensation for setting up the SPAC and supporting its management in searching for a target. The SPAC's IPO shareholders get free warrants and, in some cases rights, in exchange for buying shares in the SPAC's IPO. SPACs in our 2019-20 Merger Cohort typically had most of the shares issued in their IPO redeemed, and attracted new equity concurrently with the merger. Hence, from a functional perspective, the merger is the target's IPO. Not only is it the transaction in which the target goes public, it is the transaction in which most of the equity is raised for the post-merger company. In Section I.B, we show empirically that the bifurcation of shareholders in the SPAC IPO and the SPAC merger is even greater than redemption rates suggest, and that the similarity between a SPAC merger and an IPO is closer as well.

B. Bifurcation of Shareholders: Investment in a SPAC's IPO Versus Investment in its Merger

In this Section, we look more closely at the bifurcation of shareholders in SPAC IPOs and mergers. We have seen in Section I.A that the median rate of redemption was 73% for SPACs in the 2019-20 Merger Cohort, and that new PIPE investors replace some of that lost equity. In this Section we analyze more generally the exit and replacement of IPO investors.

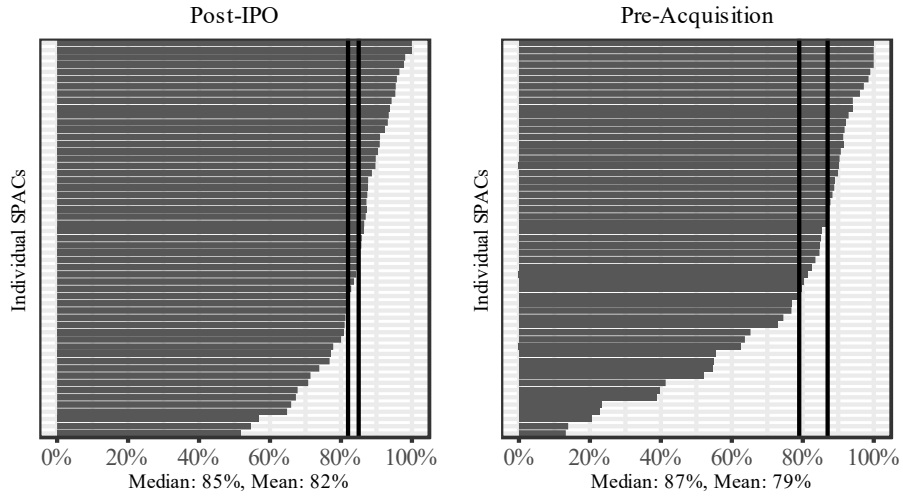
Investors in SPAC IPOs are almost entirely large institutional investment managers affiliated with hedge funds, which are required to file SEC Form 13F.[24] These 13F filers hold and trade a large fraction of publicly traded SPAC shares from the time of the IPO until the merger.

Figure 3 shows the percentage of publicly traded shares such 13F filers hold in each SPAC as of the first 13F filing date following the IPO and the last filing date prior to the SPAC's merger. There is little change over this period. Median shareholdings of 13F filers immediately following an IPO are 85%, and immediately before a merger closes are 87%. Mean ownership at each of those times is 82% and 79%, respectively. Moreover, the 13F filers that hold shares during this period, and the number of shares they hold, remain fairly constant during the period before SPACs announce merger targets. Of the shares that 13F filers buy in an IPO, a mean and median of only 20.6% and 14.4%, respectively, are reflected as sold in 13F filings before a SPAC proposes a merger. Furthermore, among shares held by 13F filers immediately before a merger announcement, a mean of 92% and a median of 98% were sold prior to the 13F

24. Form 13F filing requirements are established under section 13(f) of the Securities Exchange Act, codified as 15 U.S.C. § 78m (2018). Form 13F must be filed by institutional investment managers that exercise discretion over $100 million or more in equity securities. It is well known in the SPAC sector that IPO investors are hedge funds. So, while it is possible that the investment managers that are required to file Form 13F are investing in SPAC IPOs on behalf of clients other than hedge funds, for simplicity we will refer to IPO investors interchangeably as "13F filers" or hedge funds.

filing following the merger. A reasonable inference is that there is a near 100% turnover of shares between the time of a merger announcement and the closing of the merger.

Figure 3: Percent of SPAC Shares Owned by 13F Filers Following SPAC IPOs

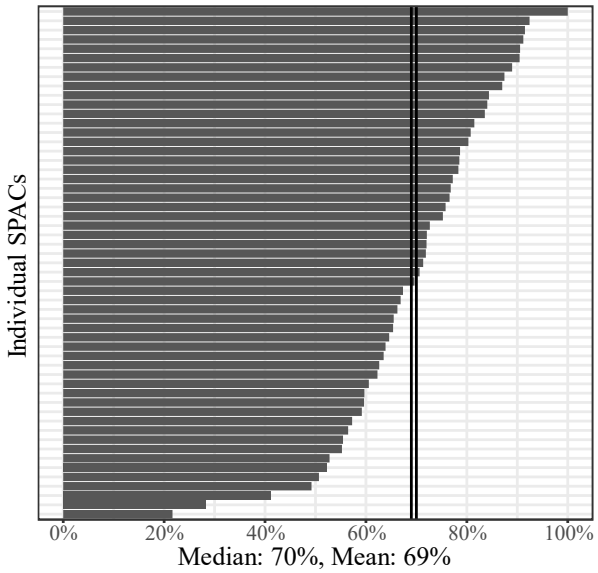


Among the 13F filers that buy units in SPAC IPOs, there is a group of repeat-playing hedge funds known colloquially in the SPAC sector as the "SPAC Mafia."[25] These funds invest in SPAC IPOs with little intention of remaining invested through the merger.[26] There is no list or definition of SPAC Mafia members, so we define the group as 13F filers that, between the time of a SPAC's IPO and its announcement of a merger, have held at least 100,000 shares in at least ten SPACs that went public between 2010 and June 2020. By this definition, there are eighty-eight SPAC Mafia members, which account for roughly 70% of total post-IPO publicly held shares and 82% of total post-IPO holdings of 13F filers.

25. *E.g.*, Patrick Jenkins, Opinion, *The Twisted Logic of Reverse Listings*, FIN. TIMES (Aug 3, 2020), https://www.ft.com/content/7501e978-2a62-4a5c-bf94-aaacf2ce40f2 [https://perma.cc/HM9Q-6UJ6].

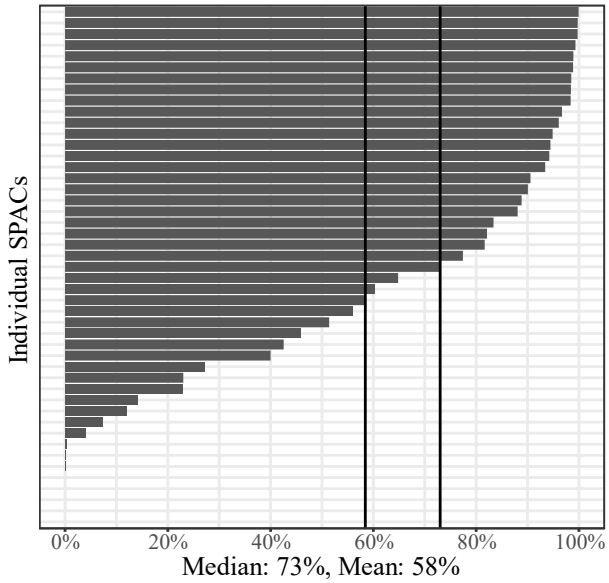
26. *See, e.g.*, *id.*; Andrew Willis & Niall McGee, *Closing in on a Deal to Break SPACs' Silence*, GLOBE & MAIL (July 19, 2016), https://www.theglobeandmail.com/report-on-business/streetwise/closing-in-on-a-deal-to-break-spacs-silence/article30998140 [https://perma.cc/G3Q3-K3D7].

Figure 4: "SPAC Mafia" Ownership of Total SPAC Shares – First Quarter Post-IPO



Neither the SPAC Mafia nor other investors in SPAC IPOs still hold their shares to any significant extent at the time a SPAC's merger closes. Figure 5 shows the percentage of shares redeemed in our 2019-20 Merger Cohort. The mean and median redemption rates among our 2019-20 Merger Cohort are 58% and 73%, respectively. A quarter of those SPACs saw redemptions over 95%. These figures, however, understate the extent to which SPACs' IPO investors exit and are replaced by new shareholders at the time of the merger. Nonredeemed shares are not necessarily retained shares. In some cases when a merger proposal is announced, share prices rise in anticipation of the deal, in which case exiting shareholders sell on the market rather than redeem.

Figure 5: SPAC Redemptions



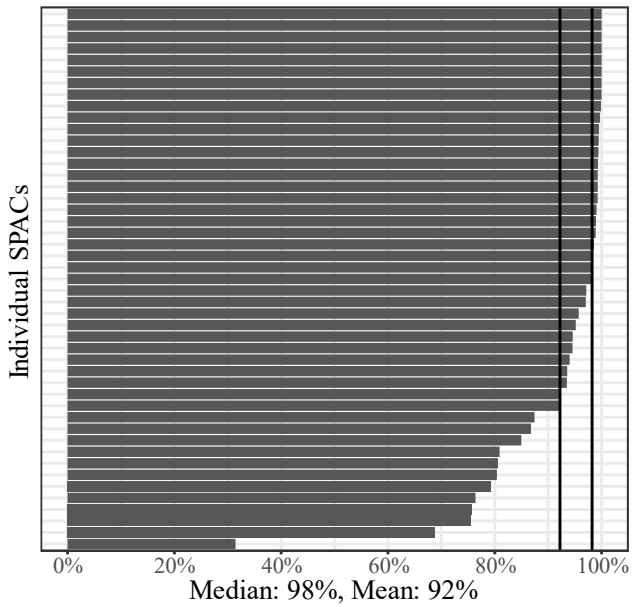
To investigate total pre-merger divestment, we examine the extent to which 13F shareholders that hold shares immediately prior to a merger announcement continue to hold after the merger. We define a "divestment rate" analogously to the redemption rates discussed above. Divestment can occur as a result of either redemption or sale of shares on the market. If, for instance, a given 13F investor reports holding 100,000 SPAC shares in its 13F filing immediately before a merger announcement, and it holds 50,000 shares according to its 13F immediately after the merger closes, then that investor will have a 50% divestment rate.[27] We then aggregate investor divestment rates to a SPAC-level calculation to calculate a SPAC's divestment rate. A SPAC with a 75% divestment rate means that 75% of the shares held by 13F filers prior to the SPAC's merger announcement were either redeemed or sold to new investors after the proposed merger was announced.

Figure 6 plots the distribution of these divestment rates. The mean and median SPAC divestment rates are 92% and 98%, respectively. For the SPAC

27. For shareholdings after the merger, we look to the first 13F filings made after the merger is completed. For shareholdings before the merger, we look at 13F immediately before the merger announcement. The results of these computations are similar regardless of which pre-merger 13F filings we use, including those immediately following the SPAC IPO. The most precise time we would want to measure shareholdings would be immediately after shareholders have made their final decisions on whether to redeem their shares or not. This is the first point when shareholders are directly exposed to the fundamental value of the target company. This generally comes shortly before the merger closes. But 13F data are not available with sufficient time granularity to distinguish between the period between the redemption decision date and the merger date. Thus, we simply look at the first 13F filing following the merger.

Mafia, divestment rates are even higher, with mean and median divestment rates of 97% and 100% respectively. Even where redemptions are low, divestment rates indicate that very few pre-merger shareholders hold their shares until after the merger's completion. For instance, among the SPACs with 30% or fewer redemptions, the average divestment rate was still 83%.

Figure 6: SPAC 13F Divestment Rates



In those SPACs with low redemption rates, new public shareholders have replaced IPO investors and remain invested in the merger. Where redemption rates are high, public equity is often replaced by PIPE investment. In our 2019-20 Merger Cohort, 77% of SPACs had PIPE investments. Of those that did, 83% included third-party investors, 61% raised equity from their sponsor, and 44% raised equity from both sources. Across all SPACs, the mean equity infusion from the total of sponsor and third-party investments at the time of the merger was 40% of the cash a SPAC delivered in its merger. In over a third of SPACs, the majority of cash delivered to targets came from such equity infusions. Among SPACs with third-party investments, the mean and median third-party investments came to 42% and 36% of cash delivered to targets. Among SPACs in which sponsors made additional investments at the time of the merger, their mean and median investments constituted 30% and 14%, respectively, of cash delivered.

This pattern of IPO investment and subsequent divestment, followed by the attraction of new equity investment at the time of a merger shows that SPAC IPOs and SPAC mergers are essentially independent of one another. The primary

role that investors in a SPAC's IPO play is to create a public vehicle that will be used later to bring a private company public through a merger in which new shareholders will invest. That transaction is in effect an IPO by the target firm, in which the SPAC's IPO investors generally play no role in that transaction. As we show in Parts II and III, the free warrants and rights that IPO shareholders receive as compensation for performing this role weigh heavily on the returns that the new shareholders will reap by investing in the merger.

II. Costs Embedded in the SPAC Structure

In this Part, we analyze and quantify the costs inherent in the SPAC structure. We define costs as value extracted by parties other than the principals to the SPAC's ultimate investment transaction—the SPAC shareholders, and the target and its shareholders. These costs reduce the amount of net cash per share that a SPAC will contribute in its merger. One cost is the dilution that results from the sponsor's 20% promote. A second cost stems from the dilution caused by the warrants and rights given to IPO-stage investors. A third cost consists of the underwriting fee and other fees and expenses associated with a SPAC's merger. Redemptions at the time of the merger increase the impact of these costs on the shareholders that remain invested in the merger.[28] After accounting for these costs, we find that the mean and median SPACs in our Cohort have just $4.10 and $5.70 respectively, in net cash per share outstanding at the time of their merger. Nonetheless, when a SPAC merges, it values its shares at $10.00. The difference between the purported $10.00 share value and the amount of net cash underlying each share is the amount that has been extracted in compensation paid to the sponsor, the IPO-stage investors, and the underwriter to set up the SPAC as a public company, and in fees paid to others in connection with the merger. In Part III, we show that SPACs' targets appear to negotiate deals based largely on the net cash they will receive for their shares, and thus tend to leave SPACs' nonredeeming shareholders to bear these costs.

A. The Sponsor's "Promote" and Cash Investment

As explained in Part I, sponsors compensate themselves for work they do for a SPAC by taking, at a nominal price, a block of shares equal to 25% of the SPAC's IPO proceeds, or equivalently, 20% of shares outstanding after the IPO. In addition, some SPACs provide that their sponsor's promote will increase at the time of a merger so that it equals 20% of the shares issued in PIPEs at that time —some netting out redemptions and some not. No promotes in our Cohort, however, are drafted at the IPO-stage to scale down with redemptions. The "promote" is a cost of setting up the SPAC, which dilutes the value of SPAC

28. The dilution costs are largely fixed, either as a dollar value or as a number of free securities issued. When redemptions increase, these largely fixed costs become greater as a percentage of pre-merger equity.

shares. While shareholders initially buy SPAC units for $10.00 each in an IPO, after accounting for the promote, there is only $8.00 in cash for each outstanding SPAC share immediately after the IPO.

The promote also creates two dysfunctional incentives for sponsors. First, at the outset, it makes creating a SPAC very attractive, regardless of whether a sponsor has realistic prospects for negotiating a winning merger. Even SPACs that enter into value-destroying mergers can yield tens of millions of dollars for sponsors. Second, having created a SPAC, a sponsor's incentive to merge is overwhelming. If it fails to merge, the SPAC must liquidate in which case the sponsor will get nothing and will lose its initial investment. The sponsor would prefer a deal in which the SPAC shareholders do well, but it will favor a deal that is bad for shareholders over no deal at all. Shareholders, on the other hand, would get back $10 per share, plus interest, if the SPAC liquidates, and would prefer a liquidation over a bad merger. This creates a situation in which the sponsor may be disinclined to be fully forthcoming in disclosing the details of a proposed merger to shareholders.

The promote is embedded in a SPAC at the time the SPAC is established. Its impact on dilution, however, often changes at the time of the merger. To the extent a SPAC's shareholders redeem shares, dilution on a per-share basis increases. If redemptions total 50% of publicly traded shares, a promote that begins as 20% of outstanding shares becomes 33% of outstanding shares at the time of the merger.[29] In some mergers, however, the sponsor agrees to cancel some of its shares or warrants, thereby increasing the ownership percentage of the other shareholders and reducing dilution. We define the sponsor's "net promote" as its initial promote minus shares that the sponsor cancels at the time of its merger. If the sponsor cancels warrants (which are not part of the promote), we deduct from the sponsor's promote the market value of the cancelled warrants, measured on the date of the merger.

Short of canceling shares, some sponsors agree to subject a portion of their promote to an "earnout." An earnout subjects some of the sponsor's shares to cancellation unless the underlying share price of the post-merger company reaches a specified threshold. Often there are two or three thresholds with a fraction of the sponsor's shares subject to each. The most common earnouts subject the sponsor's shares to thresholds of $12.50 and $15.00 and allow five years for those thresholds to be reached. In another article, we explain that these earnouts have a minimal impact on the dilution created by a sponsor's promote and on the sponsor's incentive to enter into a value-enhancing merger.[30]

In Table 2, we show the dilutive impact of the net promote in the 2019-20 Merger Cohort. Valuing the sponsor's shares at their ostensible value of

29. For example, assume a SPAC has 100 shares outstanding, with 20 shares held as the promote and 80 publicly held shares. If 50% of the 80 public shares are redeemed, leaving 40 public shares outstanding, the promote constitutes 20 out of a total of 60 shares outstanding.

30. *See* Michael Klausner & Michael Ohlrogge, SPAC Sponsor Compensation: A Sober Look at Earnouts (Oct. 28, 2021) (unpublished manuscript at 3) (on file with authors). In the analysis below, we value earnouts using standard financial derivative pricing techniques based on Monte Carlo simulation.

$10.00,[31] the median net promote is $46 million and the mean is $58 million. As a percentage of pre-merger equity—including nonredeemed publicly held shares, new shares sold in PIPEs, shares issuable to rights holders, and the sponsor's shares—the median net promote is 24% and the mean is 31%. So, the sponsor's promote siphons off $2.40 in value from each share at the median and $3.10 at the mean. Thus, while some sponsors cancel some of their shares, on average and at the median, they do not do so proportionately with cash drained from the SPAC through redemptions net of PIPEs. For SPACs at the 75th percentile, the promote amounts to 46% of outstanding shares. Hence in nearly a quarter of SPACs, the sponsor took about as many shares for free as remained in the hands of investors after redemptions.

Table 2: The Sponsor's Promote

	Median	Mean	25th Percentile	75th Percentile
Net Promote as % Pre-Merger Equity	24%	31%	13%	46%
Net Promote in Dollars (Millions)	$46	$58	$26	$73

B. Publicly Held Warrants and Rights

As explained above, a SPAC provides IPO investors with free warrants and rights in order to induce them to buy units and thereby establish the SPAC as a public vehicle that can later bring a private company public. Like the promote, these warrants and rights are a cost incurred to create a SPAC, and like the promote they dilute the value of its SPAC's shares. Units sold in the 2019-20 Merger Cohort IPOs, which were uniformly priced at $10.00, contained a warrant for between one-quarter of a share and one share, with an exercise price set uniformly at $11.50 per share. Where rights were included in units, they allowed the holder to acquire one-tenth of a share at the time of the merger at no cost. After a SPAC's IPO, warrants and rights trade separately from shares and are not subject to redemption. So, when a shareholder redeems shares for $10.00 plus interest, it keeps its warrants and rights for free.

Among SPACs in our 2019-20 Merger Cohort, IPO investors that redeemed their shares, on average, reaped an 11.6% annualized return on their investment—an investment with no downside risk, given the guaranteed redemption right. This return was primarily attributable to the free warrants and rights given to IPO investors. The warrants, on average, traded for $1.68 at the time of the merger. Because the warrants dilute share value, this cost comes at the expense of either SPAC shareholders that remain invested in the merger or

31. SPAC merger agreements value SPAC shares at $10.00. *See, e.g.*, GigCapital Inc., Current Report (Form 8-K), at 23 (Feb. 26, 2019); DD3 Acquisition Corp., Merger Prospectus (Form 425), at 6 (Aug. 8, 2019).

target shareholders.[32] The trading price of the warrants is a measure of that dilution. Like the promote, the per-share cost of the warrants increases with redemptions. While the number of warrants outstanding does not change, if the number of shares outstanding falls as a result of redemptions, the number of warrants overhanging each share increases and hence so does the dilution.

Table 3 presents data on warrants and rights, and the dilution they create. We measure the aggregate dollar value of warrants and rights by taking the value of each and multiplying them by the number of each security held by public investors.[33] This comes to a mean and median of $20 million and $17 million, respectively. Relative to pre-merger equity, which we again value at $10.00 per share, the mean and median values are 14% and 7% respectively. Rights, which are present in roughly one-third of the Cohort SPACs, are exchangeable for one-tenth of a share at the time of a merger, so we value them at $1.00. For purposes of this table and the analysis below, we value the warrants at their trading price on the day before the announcement of a merger. The mean and median pre-announcement warrant prices were $1.02 and $1.10 respectively—lower than the pre-merger prices provided above. As we explain below, our ultimate goal is to calculate the amount of net cash a SPAC has, adjusted for warrants, when it negotiates merger terms with a target—and the value the target is likely to exchange for SPAC shares. For that purpose, pre-announcement warrant prices are the correct measure of dilution. On the other hand, if one wants to measure dilution retrospectively—that is, the extent to which SPACs equity was diluted as of the time of each SPAC's merger, the merger-date prices stated above would be the relevant measures.

32. One way to conceptualize the cost that the warrants and rights impose on the post-merger company is to view a SPAC merger as an IPO, which it is as a functional matter. In this would-be IPO, the target issues shares and warrants and/or rights to the SPAC's shareholders and receives the SPAC's cash in exchange. To compete with the SPAC shareholders' redemption option, the target must convince the SPAC shareholders that it is providing $10.00 per share in value—that is, for shares alone. If the target actually does provide the SPAC shareholders with value worth $10.00 per share, the target will lose on the deal because it will be issuing the warrants and rights for free, which will dilute the value of the shares. On the other hand, if the target delivers less than $10.00 per share in value, then the SPAC shareholders will bear at least some of the loss.

33. We do not count warrants and rights owned by sponsors towards these costs. This is because the money raised by selling those warrants and rights to SPAC sponsors goes to pay SPACs' initial underwriting fees. If we counted as costs both the initial underwriting fees and the securities sold to pay for those fees, we would be double counting this cost.

Table 3: Costs from SPAC Warrants and Rights

	Median	Mean	25th Percentile	75th Percentile
Shares Purchasable Per Warrant	0.5	0.63	0.5	1
Shares Exchangeable Per Right	0	0.03	0	0.1
Value of Warrants and Rights (Millions, USD)	$17	$20	$12	$25
Warrant+Right Cost as % Pre-Merger Equity	7%	14%	4%	24%

C. Underwriting and Other Fees

A third cost that SPACs incur consists of underwriting fees and other fees that SPACs pay in connection with the merger. Targets, of course, also incur transaction fees in connection with the merger. Like SPAC fees, target fees weigh on the transaction by reducing the amount of net cash contributed to the post-merger company. But because SPACs do not consistently disclose target transaction costs, we exclude them from this analysis.[34] The numbers we report below, therefore, should be read as underestimates of the transaction costs of taking a company public through a SPAC.

SPAC underwriting fees are typically 5.5% of IPO proceeds, which is slightly less than the typical underwriting fee in a traditional IPO of comparable size.[35] Of that amount, 3.5% of proceeds are typically conditioned on the SPAC consummating a merger, and payment is deferred until the merger is consummated. While the 5.5% fee may appear low, recall that in most SPACs included in the 2019-20 Cohort, most shares are redeemed. The underwriting fee, on the other hand, is not typically adjusted for redemptions.[36] So, if one measures the fee in relation to the funds ultimately invested in a company that goes public, the underwriting fee is quite high. For example, if 50% of a SPAC's public shares are redeemed, the effective fee is 11%. To the extent the post-merger company receives cash from the SPAC, the underwriting fee is a cost of receiving that cash. But to the extent SPAC shares have been redeemed and the cash has been

34. Among SPACs that disclose target fees, those fees vary widely with some in the tens of millions of dollars and mean fees being $9 million. This amount is at the high end of the range reported for issuer expenses in traditional IPOs. Mike Bellin & Derek Thomson, *Considering an IPO? First, Understand the Costs*, PwC (2021), https://www.pwc.com/us/en/services/deals/library/cost-of-an-ipo.html [https://perma.cc/2NYW-VNRQ].

35. *Id.*

36. A few SPACs in our 2019-20 Cohort, such as EdTechX Holdings Acquisition Corporation and Greenland Acquisition Corporation, provided that the deferred underwriting fee would be adjusted downward based on redemptions. EdTechX Hold. Acq. Corp., Amendment No. 1 to Form S-1 Registration Statement (Form S-1), at 94 (Sept. 25, 2018); Greenland Acq. Corp., Registration Statement (Form S-1), at 159 (June 29, 2018). The underwriting fee for the Greenland SPAC, however, was 7% to start—considerably higher than the average fee for SPACs. In addition, a few SPACs negotiated the deferred fee downward at the time of the merger.

returned, the underwriting fee represents depleted cash that has generated no benefit for the post-merger company.

Other transaction fees that the SPAC paid in connection with the merger include accounting fees, legal fees, and financial advisory fees. In some cases, a SPAC's underwriter charges an additional fee for providing financial advice or assisting in raising the PIPE, and in some cases, the SPAC hires one or more additional financial advisors. These fees are paid out of the combined assets of the post-merger company.

In Table 4, we show underwriting and other fees for the 2019-20 Merger Cohort. We first scale underwriting fees by IPO proceeds, as an underwriting fee is typically measured. The median is 5.5% of IPO proceeds. We then show the fee as a percentage of proceeds from IPO shares that are not redeemed and that are therefore invested in the target company. Measured that way, median fees are 16% of IPO proceeds ultimately invested in the post-merger company. This reflects what we have already seen in Figure 5, above—median redemptions are over 73%. Mean underwriting fees are 311%. This apparently absurd number reflects the fact that at the extreme, redemptions approach 100% while underwriters generally keep their fees. Even focusing on the median, however, effective underwriting fees in SPACs are a lot higher than in IPOs. We compare the costs embedded in SPACs with the costs of IPOs more fully in Part IV, below.

Table 4 also reports other fees. These fees are roughly equal to underwriting fees but still far from trivial. Recall as well that we do not include target fees in these figures, so the fees reported in Table 5 are a lower bound for these other fees. The mean and median other fees amount to 6% and 4%, respectively, of pre-merger, post-redemption equity. Because neither these fees nor the parties receiving them are typically disclosed in any detail, we do not know what value a SPAC receives in return. Their opacity itself, however, is not ideal.

Table 4: Underwriting and Other Fees

	Median	Mean	25th Percentile	75th Percentile
Underwriting Fee as % IPO Proceeds	5.5%	5%	5%	6%
Underwriting Fee as % Non-Redeemed Share Proceeds	16%	311%	6%	94%
Underwriting Fee as % Pre-Merger Equity	5%	7%	4%	10%
Other SPAC Fees, Millions USD	$7	$13	$3	$20
Other SPAC Fees as % Pre-Merger Equity	4%	6%	2%	8%

D. The Bottom Line on SPAC Costs

Table 5 summarizes the three costs inherent in SPACs—the sponsor's net promote, the warrants and rights, and the underwriting and other fees. In addition

to providing figures for the full 2019-20 Merger Cohort, we separate the Cohort into two groups. One group of SPACs, which we designate as "high quality," either have sponsors that are private equity funds listed in PitchBook with assets under management of over $1 billion, or they have sponsors or managers that are former senior officers of Fortune 500 companies. Twenty-four of our forty-seven SPACs meet this definition of high quality. We refer to the others as "non-high-quality." These designations are not based on performance; some non-high-quality SPACs have performed very well, and some high-quality SPACs performed poorly. The distinction is based solely on the experience of the sponsor outside the SPAC context.

The cost shown here is staggering. For the full Cohort, the mean and median total costs as a percentage of pre-merger equity are 58% and 43%, respectively. As a result, at the time a SPAC merges, on average it has $4.10 in net cash underlying each share, and at the median it has $5.70.[37]

Table 5: Total SPAC Cost Summary

	Median			Mean		
	All	**HQ**	**Non-HQ**	**All**	**HQ**	**Non-HQ**
Costs as % Pre-Merger Equity						
Net Promote	24%	16%	40%	31%	21%	41%
Underwriting + Other Fees	10%	9%	14%	14%	12%	16%
Warrant + Right Cost	7%	5%	23%	14%	8%	20%
Total Costs	43%	30%	80%	58%	40%	77%
Net Cash per Share	$5.70	$7.00	$2.70	$4.10	$5.80	$2.30

37. Net cash per share equals approximately $10.00 minus the sum of costs we enumerate here. There are two ways in which the calculation of net cash per share may differ from $10.00 minus the sum of these costs. First, our calculation of net cash per share reflects PIPE investors buying shares at a price less than $10.00. Second, in lieu of the initial underwriting fee, we treat sponsor warrants as a cost, which we value as equal to the trading value of a SPAC's public warrants the day before the merger announcement. The proceeds of sponsors' purchases of warrants are used to pay the initial underwriting fee and other expenses of the SPAC, which we do not treat as direct costs. We treat the deferred underwriting fee, along with other fees, directly as a cost. We treat warrants as a liability. This follows the SEC's accounting guidance on warrants. Statement of John Coates and Paul Munter, *supra* note 10. In the earlier draft of this paper posted in October 2020, we treated both public and sponsor warrants as equity (the denominator in cash per share). We converted warrants to a fractional share equivalent (based on an assumed $10 per share value) and added that to total pre-merger shares—the denominator of the cash-per-share fraction. Treating warrants as a liability, rather than as equity, results in a reduction of $0.40 and $0.60 in median and mean cash per share, respectively. Gahng et al, *supra* note 8, calculate cash per share for SPACs that went public after 2015 and merged before the end of September 2021. They report mean and median cash as $7.48 and $8.13, respectively. Their calculations differ from ours in two respects. First, they do not subtract the value of the warrants from cash per share and instead separately take account of the dilution caused by the warrants. There is no substantive difference between these approaches. Second, their sample includes the July 2020-December 2020 period during which redemption rates were lower and PIPE investments were larger than in our sample period.

The difference in costs between high-quality and non-high-quality SPACs is also remarkable. High-quality SPAC costs are certainly high—mean and median costs are 40% and 30% of pre-merger equity, respectively. But non-high-quality SPAC costs are far higher still – with mean and median costs of 77% and 80% of pre-merger equity.

There are at least three drivers of the difference in costs between the two groups. First, non-high-quality SPACs generally gave away roughly twice as many warrants and rights per unit in their IPOs. Second, this dilution is amplified by higher redemptions among the non-high-quality SPACs, which was 74% on average, compared to 43% average for high-quality SPACs. Third, non-high-quality SPACs had much lower PIPE proceeds to replace funds lost to redemptions and thereby reduce dilution. The mean high-quality SPAC raised PIPE funds from third-party investors and SPAC sponsors equal to 70% of IPO proceeds. By contrast, the mean non-high-quality SPAC raised total PIPE funding equal to just 12% of its IPO proceeds.

The dilution and dissipation of cash embedded in the SPAC structure reduce the value of SPAC shares. In a merger between a SPAC and a target, the parties ascribe a value of $10.00 to SPAC shares. That is roughly the redemption price of a SPAC share, and therefore the price at which it trades prior to a merger. But the SPAC does not deliver $10.00 of cash to the target. Far from it. It delivers $10.00 minus the costs we describe above. So, the median SPAC delivers $5.70 in net cash for each pre-merger share—more for high-quality SPACs and less for non-high-quality SPACs. For a merger to be value-enhancing for nonredeeming SPAC shareholders and target shareholders of the median SPAC, the merger must create surplus sufficient to fill a $4.30 per-share hole. That surplus may come from value inherent in the target becoming a public company, from the value the sponsor and PIPE investors provide in bridging information gaps between the target and the market, from the uses to which the target can put the SPAC's cash, and from the value of the continuing engagement by the SPAC's sponsor. If these sources of value are not great enough to fill the cash shortfall, however, either the SPAC or target shareholders, or both, will lose out in the merger. The price or share exchange that the SPAC and the target negotiate will determine the allocation of those losses. As we show in Part IV, for our 2019-20 Merger Cohort, nonredeeming SPAC shareholders tended to bear most of the cost embedded in SPACs.

We do not include here SPAC costs as a percentage of post-merger equity—that is, SPAC plus target equity. This figure is often cited as a measure of the extent to which a SPAC has diluted equity and dissipated cash.[38] In fact, however, this is not a valid measure of value extracted from a SPAC. If the SPAC shareholders bear the SPAC's costs, then target equity is not relevant. If target

38. SVF Investment Corp. 3, Current Report (Form 8-K) (Dec. 13, 2021). *See also* Carol Anne Huff, *SPAC 101*, WINSTON & STRAWN (2020), https://www.winston.com/images/content/1/3/v2/135061/Winston-Strawn-SPAC-Basics-Presentation-2018.pdf [https://perma.cc/9T7X-3MWD] ("IPO raise is typically about 1/4 to 1/3 of expected enterprise value of target to minimize effect of dilution resulting from founder shares and warrants.").

shareholders bear SPAC costs, then SPAC equity is not relevant. The only way the sum could be relevant is if they happen to share the costs proportionally to their post-merger shareholders. As we show in the next section, they do not.

III. Who Bears the SPAC Costs? Post-Merger Price Performance

Having established that setting up a SPAC entails substantial costs, the next question is whether nonredeeming shareholders bear those costs or whether they shift some or all the cost to the target with which the SPAC merges. Take the median SPAC described at the end of Part II with a purported share value of $10.00 but only $5.70 per share in net cash per share. If the SPAC's shareholders get shares in a combined post-merger company worth $5.70, then they will bear the $4.30 cost embedded in the SPAC. By contrast, if the SPAC's investors get shares worth $10.00, or more, then either the SPAC has generated enough deal surplus to make up for the SPAC's costs, or the target has absorbed the cost.

The terms of a merger agreement determine which party bears a SPAC's costs. Suppose that the median SPAC, with $5.70 in net cash per share, merges with a target whose shares are also worth $5.70 each pre-merger. Suppose that both firms have 100 shares outstanding. If the target negotiates a one-for-one share exchange, viewing the value of the SPAC solely in terms of the net cash it will provide, the target shareholders will receive cash (directly in a cash merger, or indirectly in a stock merger) equal to the value of their shares. In a stock-for-stock merger, the target shareholders will give up one share worth $5.70 in return for one share in the post-merger company, which will also be worth $5.70.[39] They will break even on the deal. The SPAC's nonredeeming shareholders, on the other hand, will see their share value drop in price from roughly $10.00 prior to the merger to $5.70 after the merger (assuming the market efficiently values the post-merger firm).[40] The SPAC's nonredeeming shareholders will bear the $4.30 cost that resulted from value extracted by the sponsor's promote, the IPO investors' warrants, and the underwriting and other fees. Conversely, if the SPAC negotiated an exchange of one SPAC share for about seven target shares, the nonredeeming SPAC shareholders would get $10.00 in post-merger value for their shares and come out even—at the target shareholder's expense.[41] Assuming the target shareholders know, or have a reasonable estimate, of the value of their

39. Assuming the value of the SPAC is solely in its cash, the SPAC will be worth $570 with 100 shares outstanding. The target will be worth the same amount, with the same number of shares outstanding. So, the combined company will be worth $1,140 with 200 shares outstanding, or $5.70 per share.

40. In this example, we stipulated that the target's business is worth a known amount of $570. In reality, the value of a target's business will be highly uncertain. If SPAC shareholders know the pre-merger business is worth $570, they will reject a one-for-one share exchange, but if they believe the target's pre-merger business is worth $1,430 or more, and that the combined company will therefore be worth at least $2,000, then they will agree to a one-for-one exchange. As we show in this section, post-merger price performance suggests that SPAC investors have been far too optimistic in either appraising the value of the targets with which their SPACs merge or in estimating the dilution in their SPACs.

41. In this event, there would be $1,140 value in the post-merger company and 114 shares outstanding—100 shares held by the SPAC shareholders, and 14 issued to the target's shareholders. Each of the 114 shares would then be worth roughly $10.00.

own company, they will agree to this deal only if they believe that (a) there are non-cash benefits to the merger that are substantial enough to make up for the SPAC's cash shortfall, and (b) these non-cash benefits could not be obtained more cheaply through any other funding method. As we have said, if the merger creates enough surplus, it is possible that both target and nonredeeming SPAC shareholders come out ahead. But unless a substantial surplus is created, it is impossible for both parties to do well.

Because the value of the target in the real world is unknown, one cannot observe from the terms of a merger how the costs embedded in a SPAC have been allocated. But the statistical relationship between pre-merger net cash and the post-merger share price can provide a basis for inference. If SPAC shareholders tend to get shares in post-merger companies that are worth roughly the amount of net cash per share in the SPAC prior to the merger, the implication would be that targets tend to negotiate deals that protect themselves from SPACs' costs.

In this Part we analyze post-merger returns for SPACs in the 2019-20 Merger Cohort, and find that they are quite poor. We further find that post-merger share prices are highly correlated with pre-merger net cash per share. We therefore conclude that SPAC shareholders that hold shares at the time of a merger and thereafter tend to bear the costs embedded in SPACs. By contrast, we find that sponsors' returns are very high, even when post-merger price performance is poor.

A. Post-Merger Returns to Nonredeeming SPAC Public Shareholders

To measure post-merger returns to nonredeeming SPAC shareholders, we begin with a SPAC's redemption price, which is roughly the price at which the SPAC trades immediately before the merger is announced. We thus compute returns for a given SPAC at time t as:

$$\text{Return}_t \coloneqq \frac{\text{Adjusted Price}_t}{\text{Redemption Price}} - 1$$

Adjusted Price_t is the price of the SPAC's common shares at time t, adjusted for stock splits and dividends. In Table 6, we present SPAC returns adjusted by the Nasdaq, the Russell 2000 Index, and the Renaissance Capital IPO Index.[42] The IPO index reflects IPO performance beginning five days following an IPO and ending two years after the IPO. Consequently, it omits the "pop" in price that often occurs on the day of the IPO.[43]

42. To make the adjustment, we subtract from each SPAC's return the return an investor would have earned by redeeming its shares and investing the proceeds in each index at the time of the SPAC's merger.

43. For details on the IPO index construction, see *Renaissance IPO ETF*, RENAISSANCE CAPITAL (July 15, 2021), https://www.renaissancecapital.com/Docs/Renaissance-IPO-Index-Ground-Rules.pdf [https://perma.cc/NL4Q-KX3Q]; *Ground Rules: Renaissance IPO Indices*, RENAISSANCE CAPITAL (Sept. 2021), https://research.ftserussell.com/products/downloads/Renaissance_IPO_Indices_Ground_Rules_new.pdf [https://perma.cc/56XQ-8Z3Q].

We begin by considering the performance of all SPACs in the 2019-20 Merger Cohort, and then separately investigate performance differences between SPACs with high-quality sponsors, as defined above, and others. Although SPACs with high-quality sponsors have the same structure as others, and therefore the same sources of cost, there are reasons why their performance may be better than that of others. First, as shown above, SPACs with high-quality sponsors tend to have less dilution than others. Second, if a SPAC's sponsor remains engaged with a post-merger company, its skills and experience may enhance the company's performance, which may fill the value hole created by the dilution that they do have. Third, if a high-quality sponsor can more credibly vouch for the value of a target company, then it may help to bridge information asymmetries between targets and investors in a way that can enable a mutually profitable deal to occur that would otherwise not have been feasible.

Table 6: Post-Merger SPAC Returns

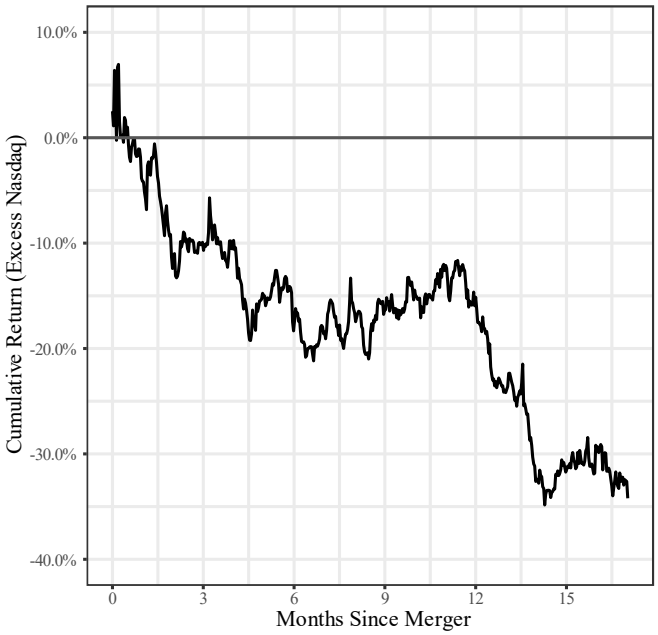
	Twelve-Month			November 1, 2021		
	All	**HQ**	**Non-HQ**	**All**	**HQ**	**Non-HQ**
Mean Return	19.1%	64.7%	-28.4%	16.8%	56.9%	-24.9%
Median Return	-19.3%	8.1%	-47.0%	-4.7%	14.6%	-40.4%
Mean Return (Excess over IPO Index)	-50.9%	-2.8%	-101.0%	-100.4%	-52.5%	-150.3%
Median Return (Excess over IPO Index)	-88.3%	-49.4%	-102.8%	-116.0%	-97.2%	-154.0%
Mean Return (Excess over Nasdaq)	-17.9%	29.9%	-67.8%	-64.1%	-19.0%	-111.3%
Median Return (Excess over Nasdaq)	-59.4%	-35.3%	-87.8%	-87.8%	-56.9%	-125.9%
Mean Return (Excess over Russell 2000)	-4.4%	43.9%	-54.8%	-38.0%	8.8%	-86.8%
Median Return (Excess over Russell 2000)	-38.5%	-16.5%	-55.0%	-49.3%	-34.6%	-107.2%
Number of SPACs	47	24	23	47	24	23

As Table 6 shows, SPACs on average had positive unadjusted returns (19.1%) as of twelve-months following a merger. Markets on average, however, rose far more rapidly during the periods following the mergers in our Cohort. As of one year following a merger, the average SPAC had underperformed against the IPO index by 50.9%, against the Nasdaq by 17.9%, and against the Russell 2000 by 4.4%. Many of the SPACs in our Cohort hit their twelve-month anniversary during the SPAC bubble between the fall of 2020 and the spring of 2021, and have seen their share prices decline with the bubble's deflation.[44] We,

44. For a discussion of the SPAC bubble, see *infra* Part VII. *See also* Noel Randewich, *Analysis: SPAC Returns Trail S&P 500 as Retail Investors Temper Interest*, REUTERS (May 4, 2021), https://www.reuters.com/business/spac-returns-trail-sp-500-retail-investors-temper-interest-2021-05-04/ [https://perma.cc/54LE-C4L4]; Al Root & Nicholas Jasinski, *The SPAC Bubble Has Popped. Where to Find Bargains Among the Wreckage*, BARRON'S (May 17, 2021), https://www.barrons.com/articles/the-spac-bubble-has-popped-where-to-find-bargains-now-51621040743 [https://perma.cc/77G8-WBTB].

therefore, also present returns as of November 1, 2021, the last date data was available for this Article. These returns are worse compared to each of the benchmark indices, with average excess returns of 100.4%[45] under the IPO index, 64.1% under the Nasdaq index, and 38.0% under the Russell 2000. Both twelve-month returns and returns up to November 1, 2021 are also far worse than investors would have received had they bought into traditional IPOs at the closing prices for the first day of post-IPO trading.[46] SPAC results measuring post-merger performance using factor models, rather than simply average returns, yield similar results.[47] Figure 7 plots the development of SPACs' post-merger returns over time, and shows a steady decline, on average.

Figure 7: Mean Cumulative Post-Merger Returns, Excess Nasdaq



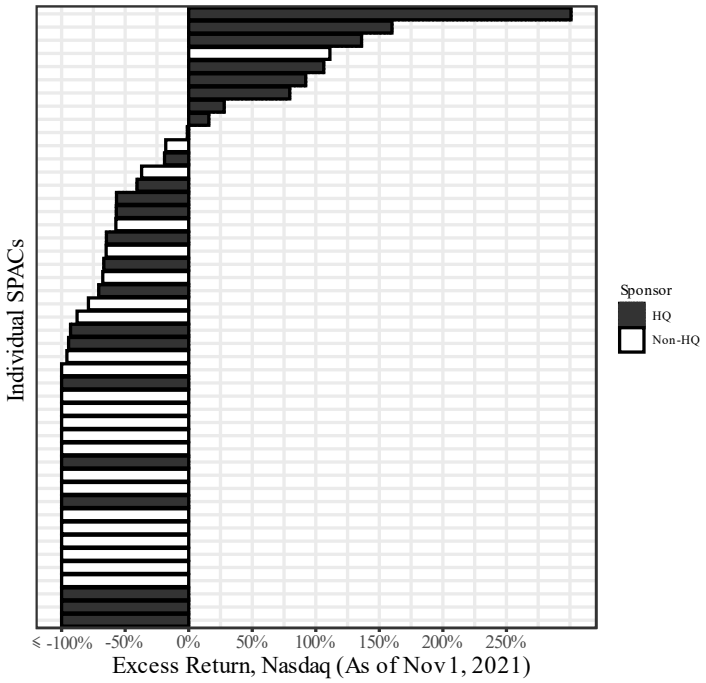
45. Because the excess return is simply a SPAC's return minus the market return, if a SPAC has lost, for instance, 50% of its value while the market has gained 50%, then we would measure -100% excess return.

46. For the traditional IPOs that occurred during the period of our Cohort, the average return to investors that bought in at the first-day's closing price was 18% under the Nasdaq and 12% above the Russell 2000, measured as of November 1, 2021. In other words, even investors who could not buy into traditional IPOs at the offering price, and thus who could not benefit from any potential IPO underpricing, still would have done much better than they would have done from choosing not to redeem SPAC shares.

47. In particular, we follow the approach to factor modeling used for examining IPO returns in Jay R. Ritter & Ivo Welch, *A Review of IPO Activity, Pricing, and Allocations*, 57 J. FIN. 1795, 1818 (2002). Thus, we compute average daily returns for the SPACs in our Cohort, and fit one- and five-factor models to these, using the market factor and the Fama-French five factors, respectively. For all SPACs, daily alphas from these models are negative -0.09% and -0.07%, respectively.

Table 6 also shows that SPACs with high-quality sponsors did notably better than other SPACs in our Cohort. Nonetheless, their performance compared to benchmark indices was still mixed at best. The median high-quality SPAC did quite poorly on a market-adjusted basis, regardless of which index is used to adjust returns. Mean returns are somewhat better: as of one year following a merger, the mean high-quality SPAC underperformed the IPO index by only 2.8% and outperformed the Nasdaq by 29.9%. Yet, by November 1, 2021, the mean high-quality SPAC underperformed against the IPO index by 52.5% and underperformed against the Nasdaq by 19.0%. The mean did, however, beat the Russell 2000 by 8.8%. Mean and median returns for the non-high-quality SPACs, by contrast, are consistently terrible across all time periods and index comparisons.[48] Figure 8 shows the distribution of individual SPAC returns, excess of the Nasdaq index. All but one non-high-quality SPAC underperformed, and most underperformed by very large margins. Some high-quality SPACs did well—a few very well—but most others ranged from poor to very poor.

Figure 8: Distribution of Individual SPAC Returns



48. Because investor returns are determined by the average return on their portfolio investments, rather than the median, mean returns may be of interest from an investor perspective. Median figures, by contrast, convey information about a "typical" SPAC. On mean versus median returns, see Hendrik Bessembinder, *Do Stocks Outperform Treasury Bills?*, 129 J. FIN. ECON. 440, 441-52 (2018).

Note: Excess returns below -100% truncated to -100%.[49]

If we look at returns weighted by measures of SPAC size, the picture is similar to what we see with returns to high-quality SPACs. High-quality SPACs tend to have larger IPOs, lower redemptions, and more PIPE funding. Thus, weighting returns by IPO size, post-redemption size, or post-PIPE size show better returns than the unweighted returns reported above, but results are still mixed, and meaningfully lower than investors would have received from investing in traditional IPOs.[50]

Returns to third-party PIPE investors are higher than returns to public shareholders. This is largely because SPACs with high-quality sponsors attracted more PIPE than other SPACs attracted. In addition, PIPE investors often purchased shares at a discount to the roughly $10.00 price that public shareholders in effect pay by choosing not to redeem their shares. As of November 1, 2021, average returns to PIPE investors are positive 72%, but 45% below the IPO index and 8% below the Nasdaq.

The poor post-merger returns for our Cohort as a whole are consistent with SPAC performance prior to 2019. Figure 9 compares average post-merger returns at one week, one year, and two years for SPACs that merged from 2010 to 2019, and shows SPACs significantly underperforming in every year, with performance consistently worsening the further from the merger date one measures.[51] The declining performance over longer periods of time suggests a continuous downward adjustment in the market's valuation of post-merger SPACs.[52]

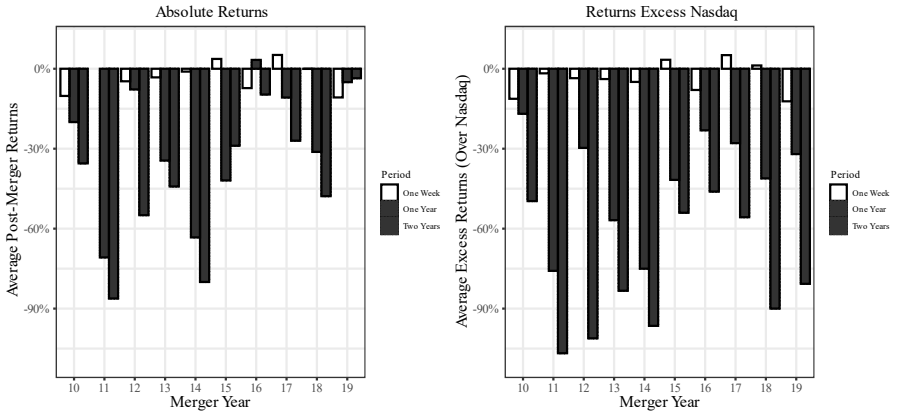
49. If a given SPAC had returns of, for instance, negative 50%, at the same time when the benchmark index had returns of positive 60%, then it would have an excess return of negative 110%. For simplicity, we plot these instances in Figure 8 as ≤-100% on the x-axis. The lowest excess return in our Cohort comes from EdtechX Holdings Acquisition Corp., which lost roughly 95% of its value post-merger during a time when the IPO index had risen by 130%. This would be a negative 225% adjusted return.

50. For example, when weighting by IPO size, average absolute returns as of November 1, 2021 are positive 40%, but returns are negative 78% in excess of the IPO index, and negative 41% in excess of the Nasdaq Index. When weighting by SPAC size, after accounting for redemptions, average absolute returns as of November 1 are positive 82%, negative 26% in excess of the IPO index, and positive 0.1% in excess of the Nasdaq.

51. Median returns are uniformly worse for each merger year considered.

52. In unreported tests, we investigate whether there are patterns of consistent and persistent market over-valuation of other types of firms, such as those that went public through traditional IPOs. We find nothing like the patterns depicted in Figure 9 for any other type of firm.

Figure 9: Average Post-Merger Returns for Earlier SPAC Merger Years

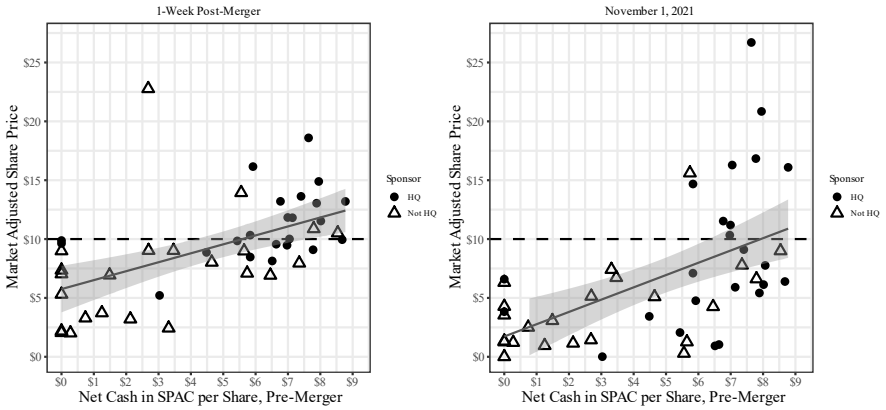


B. The Relationship Between Post-Merger Returns and Pre-Merger Cash

We next investigate whether SPAC shareholder losses are correlated with pre-merger per-share net cash. In Figure 10, we plot SPAC market-adjusted share prices one week after SPAC mergers and again on November 1, 2021 against pre-merger net cash per share in a SPAC.[53] We analyze this relationship using November 1, 2021 share prices in addition to share prices one week after the merger to allow for the possibility, reflected in Figure 9, that the market takes time to evaluate the post-merger company.

53. We use the Nasdaq index as a benchmark. If that index grew by 10% over a given period following a SPAC's merger, we would adjust an $11 post-merger share price down to $10 by dividing by 1.1. Results are similar regardless of which benchmark we use. We analyze this correlation one week after each SPAC's merger rather than one day after the merger because liquidity and trading volume are often very low, particularly for SPACs with high redemptions and thus few remaining public shares to be sold. Gahng et al, *surpa* note 8, conclude that target shareholders, rather than SPAC shareholders, bear the costs embedded in SPACs. Their analysis differs from ours in two ways. First, they treat the share price on the day after the merger as true value of the combined company's shares. That value averages to about $10 (apparently providing SPAC shareholders with the purported value of their shares rather than the cash value), even though prices consistently plumet over longer periods post-merger. Second, they do not analyze the correlation between pre-merger cash per share and drops in post-merger share value. On the other hand, they do find a correlation between the number of warrants per unit and post-merger share value, and they find that post-merger share prices tend to fall from the day of the merger onward. The Appendix provides a more extensive comparison of the methods and conclusions between our paper and those of Gahng et al.

Figure 10: Pre-Merger Net Cash per Share and Post-Merger Share Price



We find that a SPAC's pre-merger net cash per share is highly correlated with post-merger share prices.[54] SPACs with little net cash per share at the time of their merger do much worse following a merger than do those with more net cash. This implies that a major source of SPACs' poor performance are the costs embedded in their structure. The relationship between pre-merger net cash and post-merger share price is present both one week after the merger and as of November 1, 2021. Moreover, the slopes of the regression lines are very close to one.[55] This means that, on average, an extra dollar in pre-merger net cash per share translates into roughly one extra dollar in post-merger share price. Conversely, in terms of the costs we have documented, higher pre-merger cost means lower post-merger share prices dollar-for-dollar.

The intercepts of the regression lines are important as well. One can interpret the intercept as a lower bound on the amount of surplus created as a result of the target merging with the SPAC and going public.[56] Using prices one week after the merger, the intercept is large and statistically significant, indicating that SPAC investors got shares worth roughly $4.95 more than per-share pre-merger net cash. But by November 1, 2021, that surplus dissipates. The intercept drops to $1.70 and is not statistically significant. Thus, in the longer-term model, post-merger share prices are close to pre-merger net cash per share.

54. For one-week post-merger, $p = 0.005$ for the coefficient on net cash per share, and when using November 1, 2021 prices, $p = 0.0008$. The R^2 value is 0.16 for share prices one-week post-merger and 0.29 for November 1, 2021 share prices.

55. In the regression using SPAC share prices one week after a merger, the slope is 1.16 (not statistically distinguishable from 1), and for the regression using prices as of November 1, 2021, the slope is 1.04 (not statistically distinguishable from 1).

56. It is a lower bound because if target owners give up shares worth more than the net cash SPACs deliver, then they are transferring wealth to SPAC investors. If target owners do not capture merger surplus at least as large as this wealth transfer, then they will be losing money by merging with SPACs. We presume that on average, target owners have a reasonable estimate of their firm's value and are at least breaking even by choosing to merge with SPACs.

What does this analysis tell us about who bears the costs that we have shown to be embedded in the SPAC structure—SPAC or target shareholders? If we focus on the slope of the regression line, one must conclude that the SPAC shareholders bear all costs on the margin. One dollar less in cost means one dollar more in post-merger share price. But the positive intercept suggests that SPAC shareholders reap some value in addition to the net cash in the SPAC and a commensurate amount of value from the target. Because the intercept for the November 1, 2021 regression is not significantly different from zero, however, we must be cautious in reaching that conclusion. Even if SPAC shareholders receive shares worth $1.70 more than the mean pre-merger net cash per share of $4.10 (yielding shares worth $5.80), they are losing $4.20 of the roughly $10.00 redemption price that they chose not to take. And at the median net cash per share of $5.70 (yielding shares worth $7.40), they are losing $2.60.

According to these regressions, SPAC shareholders bear the costs we have documented as embedded in the SPAC structure.[57] On the other hand, they extract some surplus from the deal, so their net losses are partially mitigated.[58] In the Appendix, we return to the question of how costs and benefits of SPAC mergers are allocated between SPAC and target shareholders. In that analysis, we take the target's perspective and treat the target as issuing shares in an efficient market, as opposed to engaging in a bilateral negotiation over surplus as we do here.

Figure 10 is also instructive with respect to the difference between high-quality SPACs and others. First, high-quality sponsors are grouped toward the right side of the graph, reflecting the fact that they had more net cash per share prior to their mergers than did other SPACs—a fact we document on Part II. Second, proportionately more high-quality sponsors generated positive returns,

57. If one takes the results of these regressions completely at face value, it would imply that if SPAC costs went to zero, and thus pre-merger SPAC net cash per share went to $10.00, then all of the marginal benefit would accrue to SPAC investors. In practice, a SPAC with zero costs is unrealistic and goes well outside of our observations, so we do not directly make predictions about what would happen in such a scenario.

58. The relationship between pre-merger net cash and post-merger share price could be direct. That is, if the SPAC has cash of $5.00 per share, it may trade its shares for $5 worth of target shares, and the market may value the combined company's shares at $5. But it cannot be quite that simple, because the net cash per share in the SPAC will not be known until redemptions are known. The target would have to predict redemptions and calculate net cash per share based on that prediction. The fact that the slope of post-merger value to pre-merger net cash per share is essentially one suggests that targets may well have been able to successfully predict redemptions, at least on average. At the same time, redemptions, predicted and actual, will also reflect shareholders' view of the transaction. Tim Jenkinson and Miguel Sousa analyzed an earlier generation of SPACs, with different redemption features, and found that the market's reaction to a merger announcement predicted post-merger returns. Tim Jenkinson & Miguel Sousa, *Why SPAC Investors Should Listen to the Market*, 21 J. APPLIED FIN. 38 (2011). Gahng, Ritter & Zhang, *supra* note 8, similarly measure the correlation between redemptions and returns for more recent SPACs. The underlying dynamic of the relationship between pre-merger net cash and post-merger share value could thus be complex—too complex to sort out econometrically without exogenous variation in SPAC net cash per share and redemptions. Whatever the dynamic, however, the correlation between pre-merger net cash and post-merger share price, and the intercept that is small and statistically indistinguishable from zero, show that target companies have negotiated, on average, deals in which they give up very little value beyond the cash they receive—in other words, deals in which SPAC shareholders have born most of the costs inherent in SPACs.

which suggests that they were better able than other SPACs to generate sufficient surplus to fill the holes created by the costs embedded in their SPACs.[59] On the other hand, as reported in Table 6, a majority of high-quality SPACs had negative returns.

In sum, these results suggest that, on average, nonredeeming SPAC shareholders bear the costs embedded in SPACs. Their losses are mitigated by virtue of the fact that they extract some surplus from the deal, but on balance they lose out. On average, they would have been better off redeeming their shares (or not buying them in the first place). One might ask why SPAC shareholders would agree to bear these costs. We cannot answer that question definitively, but as discussed below, at least a partial answer may lie in poor disclosure practices and sponsor incentives that are misaligned with shareholder interests.

C. Return to Sponsors

We now analyze how sponsors have done when their SPACs merge. We begin by taking the sum of the investments the sponsor made at the time of a SPAC's IPO and at the time of its merger. We call this the "Sponsor Total Investment." We next identify the number of shares and warrants that the sponsor holds at the time of the merger. Following the merger, we determine the value of the sponsor's shares and warrants, which we call the "Sponsor Asset Value." We compute:

$$\text{Sponsor Return}_t \coloneqq \frac{\text{Sponsor Asset Value}_t}{\text{Sponsor Total Investment}} - 1$$

Sponsor securities in our Cohort are generally subject to lockup agreements through the first year following a merger. Thus, we assume that sponsors will retain their holdings during this period.[60]

Figure 11 summarizes returns to SPAC sponsors twelve months following a merger. The most successful sponsors saw returns of over $500 million and 5000%. Only a few lost money in absolute terms. Ten of the forty-seven SPACs had negative returns on a market-adjusted basis.[61] Mean sponsor returns are over $100 million. On a market-adjusted basis, however, mean returns are $66 million. In percentage terms, mean sponsor returns are 549% on an absolute basis and 512% on a market-adjusted basis.

59. We also performed this analysis separately with only high-quality sponsors and only non-high-quality sponsors. With only 24 and 23 observations, respectively, these are very small sample sizes. Nevertheless, in a regression using only high-quality sponsors and share prices as of November 1, 2021, net cash per share in the SPAC is still a significant predictor ($p = 0.0465$) of post-merger share price among HQ SPACs, with a slope of 1.18 (statistically indistinguishable from 1) and an intercept of $1.52. The R^2 is 0.17. In regressions using only non-high-quality sponsors, net cash per share is statistically significant ($p = 0.0118$) with a slope of 0.66 (statistically indistinguishable from 1), an intercept of $2.19, and R^2 of 0.27.

60. Sponsors are often not required to disclose post-merger stock sales, hedging positions, and other transactions. Thus, it is frequently impossible to compute any given sponsor's actual returns.

61. The sponsors that lost money did so because they made large additional investments at the time of the merger—perhaps to meet minimum cash requirements specified in the merger agreement or perhaps investing good money after bad.

Figure 11: Returns to SPAC Sponsors-12 Months Post-Merger

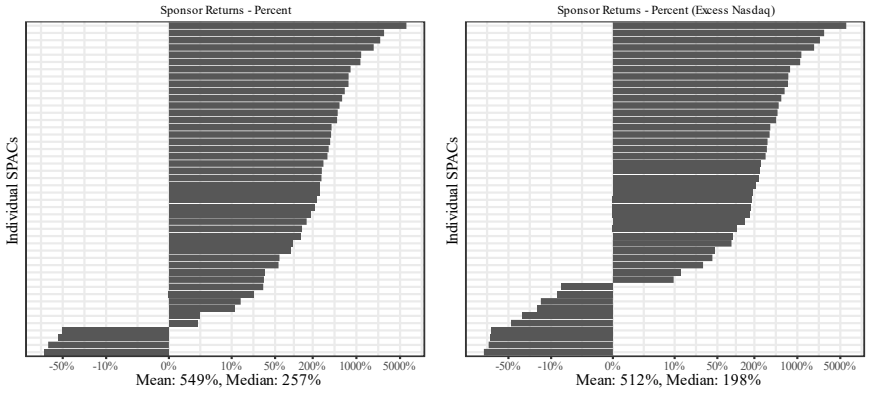
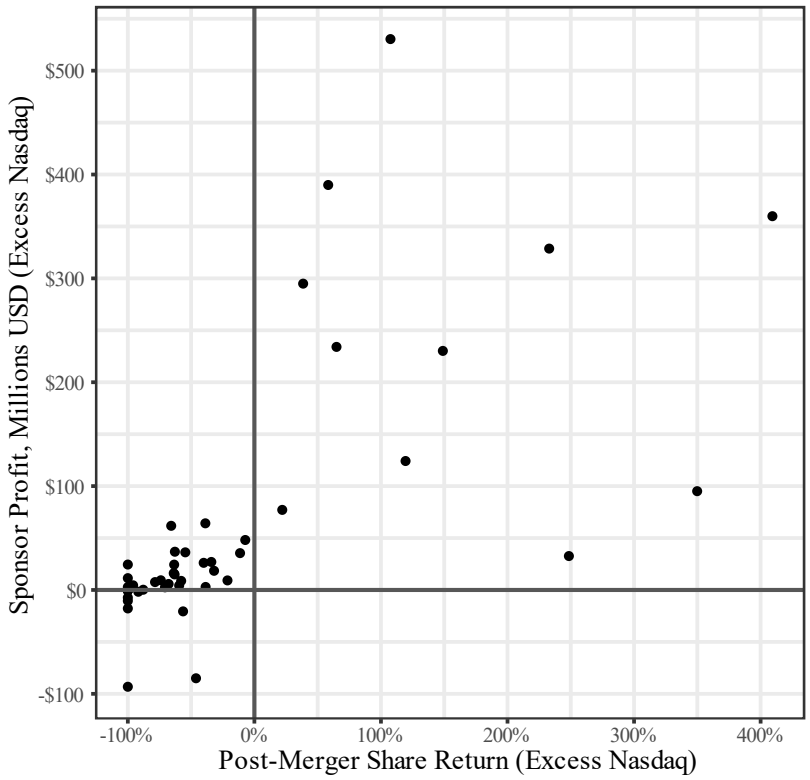


Figure 12 compares sponsor profits to post-merger returns for SPAC investors.[62] It shows that sponsors tend to do very well even where SPAC investors do quite poorly. For instance, even among SPACs that underperformed against the Nasdaq by at least 30% in post-merger returns, sponsors made an average of $5 million in profits (adjusted against the Nasdaq), and 187% in excess returns on their investments. Thus, while sponsors are not absolutely guaranteed to profit, they have a very good chance of doing so, even when investors do quite poorly. Furthermore, losses to sponsors when they occur are quite small, whereas the profits, on average, are enormous. None of this implies that sponsors purposely lead SPAC shareholders into bad deals, but that their ex-post experience is consistent with their ex-ante incentives.

62. Some SPACs have negative excess returns below -100%. This can occur, for instance, if the SPAC has absolute returns of -70% during a period in which the Nasdaq grew 40%, yielding negative excess returns of -110%. For the purpose only of displaying on the plot, we truncate such instances and report them as -100% returns.

Figure 12: Sponsor Profits and Post-Merger Shareholder Returns



In sum, nonredeeming SPAC shareholders in the 2019-20 Merger Cohort experienced substantial post-merger market-adjusted losses on average. Those losses are highly correlated with pre-merger net cash in the SPAC, which suggests that nonredeeming SPAC shareholders have been bearing the cost embedded in the SPAC structure. In contrast, returns to sponsors were extraordinarily high. The performance of SPACs with high-quality sponsors is far better than that of other SPACs, but on the whole, those returns are mixed. They substantially underperform against the IPO index; they outperform the Russell 2000 index and underperform against the Nasdaq.

D. The Social Costs of SPACs

The costs embedded in SPACs entail value extracted by sponsors, IPO investors, underwriters, and others that provide services for fees at the time of the merger. As we have shown, in the mean and median SPAC, the extraction of that value results in nonredeeming SPAC shareholders losing money. Nevertheless, it may still be possible that the total gains to sponsors, IPO

investors, underwriters and others are greater than the losses born by nonredeeming shareholders. If so, this could suggest that SPACs have at least a net positive impact on all parties collectively, even if parties other than SPAC or target shareholders pocket much of the value created. Similarly, if profits enjoyed by SPAC sponsors, underwriters, and IPO investors are greater than SPAC investors' losses, then a reduction in compensation for those parties could result in enough savings to deliver better returns to SPAC investors—in which case SPACs would be value-producing for SPAC and target shareholders.

To investigate this possibility, we compute the total amount of cash invested by all parties in SPAC mergers, and the total value of securities distributed among the SPAC sponsors, IPO investors, PIPE investors, and non-redeeming shareholders. We measure the value of these securities as of one-year following each merger, and consider both their absolute value as well as their value as adjusted for the growth of benchmark market indices.[63] We compute the difference between cash invested and security value as the "SPAC surplus" and present statistics in Table 7.

Table 7: Total SPAC Surplus, Measured on November 1, 2021 (Millions USD)

	All	**HQ**	**Non-HQ**
Mean Surplus Value	$381	$705	$44
Median Surplus Value	$79	$239	$21
Mean Surplus Value, Adj. Nasdaq	$97	$196	$-6
Median Surplus Value, Adj. Nasdaq	$4	$25	$3
Mean Surplus Value, Adj. IPO Index	$34	$83	$-16
Median Surplus Value, Adj. IPO Index	$-1	$9	$-2
Number of SPACs	47	24	23

As of November 1, the mean and median raw SPAC surplus were $381 million and $79 million, respectively. After accounting for the growth of benchmark indices, mean surplus drops to $97 million and $34 million when adjusting for the Nasdaq and the IPO index, respectively. For high-quality SPACs, the surplus is greater, but for the non-high-quality SPACs, the index-adjusted mean and median surplus values are slightly negative. If one assumes that targets on average at least break even—and there is no reason to expect otherwise—then the fact that mean surplus value over all SPACs is positive suggests that the entire SPAC process results, on average, in a net collective gain

63. For instance, if the Nasdaq appreciated 20% in value over the year following a SPAC's merger, then we would divide the total value of all securities received by SPAC-affiliated parties by 1.2.

among all parties involved in SPACs, and that the costs that we have analyzed constitute a distribution of the surplus value created by having a company go public.[64]

This collective gain, however, does not necessarily mean that SPACs are an efficient means of taking companies public from a social cost perspective. There are reasons aside from direct costs that suggest they may not be. First, because targets generally have not paid the cost of going public, and because sponsors' incentives diverge from those of shareholders, we can have no assurance that the selection of companies going public through SPACs is optimal. There could be companies that go public through SPACs that would have been more valuable remaining private (either with or without additional private funding), but that opted to go public through SPACs because of the subsidy from the SPAC. Second, the SPAC process could result in mispricing and thus misallocation of funding, even among the companies that should go public. Third, for companies that have the option of a traditional IPO, an IPO may accomplish the same result without the involvement of a sponsor and thus without the opportunity cost of that sponsors' added time and effort in the SPAC. Unless a sponsor adds post-merger value equal to the value it extracts from these SPACs, then its involvement would be an extra social cost. In Part III, we directly weigh SPAC costs and benefits as compared to IPOs.

IV. Are SPACs a Better Way to Take Companies Public?

In this Part, we compare the costs and benefits of going public through a SPAC with those of a traditional IPO. We investigate first whether, in light of the high costs we have documented, SPACs are more expensive than IPOs, and if so, whether their additional costs may be justified by added benefits. We find that the costs embedded in the SPAC structure are far higher than the cost of IPOs. Having found in Part III, however, that nonredeeming SPAC shareholders have tended to bear the costs inherent in SPACs, it is not surprising that companies with the option of an IPO see an attraction in going public through a SPAC. We next evaluate the price discovery mechanisms that historically have attracted companies to SPACs. We find that these could well be important, but that aside from SPACs' regulatory advantage in issuing financial projections (stemming from an inadvertent loophole), these features could be incorporated into IPOs and direct listings. We then investigate claims that SPACs provide advantages over IPOs with respect to speed and deal certainty, and find that although these claims may be valid in the context of particular transactions, as a general matter they are overstated.

64. These calculations make several simplifications. First, targets may well do better than merely breaking even, in which case we would be under-estimating the social value of the SPAC transactions. Second, these calculations do not put a price on the sponsor's time and effort, which in the absence of SPACs could presumably be devoted to other (perhaps) socially productive purposes.

A. SPAC Costs Compared to IPO Costs

In a traditional IPO, underwriters typically charge issuers a fee of 5% to 7% of IPO proceeds. There is also a perception among some commentators and market participants that banks' underpricing of traditional IPOs is an additional cost. Their claim is that underwriters deliberately underprice shares in order to transfer value from issuers to institutional investors with which the banks have other business. This claim of underpricing is based on the tendency for an issuer's shares to close on the day of an IPO at prices above the listing price—generating the so-called "IPO pop."[65] Many academics[66] and venture capitalists[67] have questioned whether the IPO pop really reflects the price at which an entire IPO offering could have been sold. Furthermore, the IPO pop does not meet the definition of cost that we adopted for purposes of measuring SPAC costs, namely, the "value extracted by parties other than the principals in the SPAC transaction"—that is, the investors that buy SPAC shares and the target's pre-merger owners.[68] Nevertheless, for purposes of comparing SPAC costs to IPO costs, we will treat the post-pop share price as the price at which a company could have sold all its shares in its IPO, and the pop as a cost of an IPO. That is, we will treat the IPO pop as something akin the costs inherent in SPACs. The IPO pop is typically reported as the percentage by which a firm's shares increase on the first day following its IPO. Thus, if a firm sells its shares for $10.00 in the IPO and the closing price of its shares on its first trading day at $12.00, this is described as a 20% pop, which roughly matches historical measurements for average first-day price increases.

In order to compare SPAC costs to IPO costs, we reformulate SPAC costs as a percentage of cash delivered to target companies—just as IPO underwriting fees and pops are measured—rather than as a percentage of pre-merger equity or net cash per share, as we do in Part II. Consider, for instance, a SPAC that raises $800 by selling 80 shares to the public while providing 20 shares to the sponsor for free. In Part II, we expressed the resulting dilution as 20% of pre-merger equity or $2.00 per share. If one values the sponsor's shares at $10.00 each, then

65. *See*, *e.g.*, Tim Loughran & Jay R. Ritter, *Why Don't Issuers Get Upset About Leaving Money on the Table in IPOs?*, 15 REV. FIN. STUD. 413, 438 (2002).

66. Studies have found, for instance, that returns to investors that buy in IPOs and hold longer-term tend to, at best, roughly track the market. *See* Ritter & Welch, *supra* note 47, at 1795. Thus, the pop may simply reflect short-term price-stabilizing activities of underwriters, or small numbers of overly optimistic investors who bid up prices of a relatively small volume of available shares well beyond what an issuer could sell their entire public float for. For additional perspectives that portray first-day IPO returns as representing something more complex than simply a wealth transfer away from issuers, see, for example, Laurie Krigman, Wayne H. Shaw & Kent L. Womack, *The Persistence of IPO Mispricing and the Predictive Power of Flipping*, 54 J. FIN. 1015 (1999) and Kevin Rock, *Why New Issues are Underpriced*, 15 J. FIN. ECON. 187 (1986).

67. *See* Alex Rampell & Scott Kupor, *In Defense of the IPO, and How to Improve It*, ANDREESSEN HOROWITZ BLOG (Aug. 28, 2020), https://a16z.com/2020/08/28/in-defense-of-the-ipo/ [https://perma.cc/95LT-2DJE].

68. *See supra* Part II

the sponsor receives $200 in value, which is equal to 25% of the $800 in cash that the SPAC delivers to the target. In other words, if the SPAC had sold the shares given to the sponsor for $10.00, it could have raised 25% more. This is the same assumption made with respect to the IPO pop—that all of the shares issued in an IPO could have been sold at the "popped" price. Each of these assumptions can be disputed. Our point is not to argue that either is true. Rather, our point is to compare SPAC costs with perceived IPO costs on an apples-to-apples basis.[69]

In Table 8, we reformulate our calculations of SPAC costs as a percent of cash delivered to the target. Some SPACs started with IPO proceeds in the range of $100 to $200 million and then faced redemptions of 95% or more without replacing lost funds with PIPEs or commensurately reducing the sponsor's promote, underwriting fees, and outstanding warrants. As a result, they delivered cash of $10 million or less, and had costs equal to 1000% or more of the cash they delivered. Because of this, computing mean SPAC costs as percent of cash delivered yields a result that is very high but also difficult to interpret. For this reason, we focus on the median, 25th, and 75th percentiles of costs. We compare these SPAC costs to IPO costs as calculated by Gahng, Ritter, and Zhang for the same period as our 2019-20 Merger Cohort: January 2019 to June 2020.[70] The median SPAC cost as a percent of cash delivered is 62%—more than twice as high as the median IPO cost of 28%. At the 25th and 75th percentiles, the discrepancy in costs is even more extreme, with SPAC costs over four times as large as IPO costs for each percentile.

The median SPAC cost of 62% consists roughly of 33% from the sponsor's promote, 18% from IPO underwriting and other fees, and 11% from costs of the SPAC warrants. If, for example, SPACs were to eliminate warrants, reduce sponsor promotes to 20% of cash actually delivered, and cut underwriting and other fees in half (for instance, by scaling them downwards in response to redemptions), then total SPAC costs would come down to 28% of cash delivered, largely matching the median costs of IPOs.

69. For simplicity, we have not included in the cost of SPACs any pops in share prices above $10 prior to the merger. During the period of our study, such "SPAC pops" were uncommon and where they occurred, they were typically small. From late 2020 through the Spring of 2021—a period of an apparent bubble in SPAC pricing—SPAC prices commonly popped when a merger was announced. For instance, the median SPAC pop in December 2020 was 82%. Median SPAC pops for May, June, and July 2021 were 28%, 11%, and -3%, respectively, with mean SPAC pops for those months of 43%, 20%, and 12%.

70. Gahng, Ritter & Zhang, *supra* note 8.

Table 8: Comparing SPAC Costs to IPO Costs

	Median	25th Percentile	75th Percentile
Costs as % Cash Delivered			
SPAC	62%	35%	310%
IPO	28%	7%	52%

In sum, the costs embedded in SPACs are higher than the costs associated with IPOs. This is true both with respect to cost as a percentage of cash delivered and the dollar value of SPAC and IPO costs.[71] We found in Part III, however, that companies merging with SPACs negotiate merger terms that leave those costs with nonredeeming SPAC shareholders. At some point, that will change, and targets will have to bear at least some of those costs. At that point, the appeal of SPACs to targets will likely diminish. In the remainder of this Part, we assess the purported benefits of SPACs.

B. Price Discovery Advantages of SPACs

Until recent years, the role of SPACs was understood to be one of serving companies that could not go public through a traditional IPO. These are companies for which uncertainty or information asymmetry cannot be resolved through the traditional IPO process sufficiently for investors and the issuer to arrive at a price that each accepts. These might be companies with an unusual business with few comparables on the public markets, companies that face legal uncertainty or a complicated tax situation, and companies that, for any other reason, require more investigation and analysis by investors than the IPO process allows.[72] SPACs are understood to offer mechanisms that better address severe

71. As shown in Table 1, firms merging with SPACs issue roughly 35% of their post-merger shares to target shareholders. By contrast, firms going public through IPOs tend to transfer between 20 and 25% of their post-IPO shares to new investors. See Jay R. Ritter, *Initial Public Offerings: Updated Statistics*, WARRINGTON COLL. OF BUS. (Oct. 1, 2021), https://site.warrington.ufl.edu/ritter/files/IPO-Statistics.pdf [https://perma.cc/8LA9-N92]. Thus, since firms sell on average more shares when going public via SPAC, and pay higher costs on a per share basis, SPAC costs are even higher compared to IPO costs on a total dollar basis.

72. For instance, a PitchBook article mentioned that a classic SPAC merger target "in theory would be with an innovative company that otherwise would not have been able to list on the public markets." Cameron Stanfill & Joshua Chao, *The 2020 SPAC Frenzy: Blank-Check Vehicles Offer Many Benefits but Are Not a Cure-All for IPO Process*, PITCHBOOK (Sept. 1, 2020), https://pitchbook.com/news/reports/q3-2020-pitchbook-analyst-note-the-2020-spac-frenzy [https://perma.cc/5XKB-LRKH]. Similarly, Martin Alvarez of LTSE writes, "For most companies that use them, a SPAC may have been the only viable alternative for the company to get public." Martin Alvarez, *The Fast Food of IPO Alternatives*, LTSE (Aug. 12, 2020) https://medium.com/ltse-blog/the-fast-food-of-ipo-alternatives-574a8f6d205e [https://perma.cc/W8BJ-MHNV]. A client memo by Weil similarly notes that SPACs are "[a]ble to take public companies that are not obvious IPO candidates." Douglas P. Warner, Alexander D. Lynch & Barbra J. Broudy, *Exit Strategies: IPOs Versus SPACs*, WEIL GLOBAL PRIVATE EQUITY WATCH

information asymmetry than does the IPO process.[73] To the extent this is true, SPACs could be attractive not only to companies with severe information asymmetry but to others as well, even if they have the option of going public through an IPO.

The differences between SPACs and IPOs with respect to price discovery mechanisms that respond to information challenges stem in part from the fact that SPAC mergers are governed by the regulations applicable to mergers, as opposed to those applicable to public offerings, and in part from transactional structures that are common in the merger setting and less common in the IPO setting. The primary regulatory difference between SPACs and IPOs related to the communication of information is the treatment of projections and other forward-looking statements. The transaction structures include the use of private investment in public equity (PIPEs) and earnouts that make merger consideration contingent on post-merger performance.

1. Projections

A key difference between the rules applicable to a merger and those applicable to an IPO is that projections and other forward-looking statements made in connection with a merger are covered by a safe harbor from liability in private actions under the securities laws.[74] So long as they are accompanied by cautionary language, if projections or other forward-looking statements turn out to be false, the issuer is not subject to liability unless the person who made the statement knew the statement was false when making it. The objective of the safe harbor is to encourage public companies to provide information to the market even where that information is subject to uncertainty—as projections and other forward-looking statements necessarily are. The safe harbor, however, does not cover statements made in connection with an IPO. As a result of this legal treatment and longstanding practice, IPO prospectuses and presentations given

(Mar. 19, 2018), https://privateequity.weil.com/features/exit-strategies-ipos-versus-spacs/ [https://perma.cc/8WYX-5BJA]. A CNN article recently noted that "[t]here was a time when investors viewed SPAC deals with derision. The belief was that if you needed to go public through a reverse merger with an already existing shell company, then you probably weren't healthy enough to do a more traditional IPO." La Monica, *supra* note 4.

73. According to one commentator, "In a SPAC merger, companies can . . . attach earn-outs, reduce insider lockups, and more, giving the private company more flexibility to tailor a transition to the public market around its wants and needs. This customizability caters well to companies that have a complicated story or would be a more difficult sell to traditional public market investors." *Id.*

74. 15 U.S.C. § 78u-5 (2018). This safe harbor does not apply to actions brought by the SEC or the Department of Justice. The judicially created "bespeaks caution" doctrine, which applies to both private actions under the securities laws and actions brought by the SEC or the Department of Justice, provides some protection for projections made in connection with IPOs, but there is uncertainty regarding how much protection courts will afford issuers under this judicial doctrine, leading most lawyers and underwriters working on traditional IPOs to avoid using projections. *See* Jeanne Calderon & Rachel Kowal, *Safe Harbors: Historical and Current Approaches to Future Forecasting*, 22 J. CORP. L. 661, 667-77 (1997) (explaining the bespeaks caution doctrine).

in roadshows rarely include issuer financial projections or other forward-looking statements.[75]

SPACs and their targets, in contrast, routinely include projections and other forward-looking statements in their presentations to potential investors and in their proxy statements. Commentators commonly state that the freedom to provide the market with projections is an important attraction of SPACs as means of going public.[76] For companies that face challenges bridging information asymmetries with potential investors, the freedom to provide and explain projections may be important. One recent study of SPACs found that SPAC targets are more likely to be "pre-revenue" or low-revenue companies.[77] Those companies may have little other than projections with which to communicate their value to investors. On the other hand, aggressive projections could be one of the reasons SPAC shareholders go along with mergers that leave them with losses.

As we discuss in Part VI below, the SEC's Acting Director of the Division of Corporate Finance recently expressed concern regarding SPACs' projections and has raised doubts regarding whether the safe harbor covers SPAC mergers.[78] SPACs, however, continue to include projections in their investor presentations and proxy statements.

2. Private Investment in Public Equity (PIPE) Financing

The common use of PIPEs in connection with a SPAC's merger is a second mechanism of price discovery. In our 2019-20 Merger Cohort, 64% of SPACs

75. Andrew Bary, *Facebook IPO Forecasts Should Be for Everyone*, BARRON'S (May 22, 2012), https://www.barrons.com/articles/SB50001424053111903964304577420642880068230 [https://perma.cc/XAF8-ER98] ("One of the challenges of investing in an IPO is that prospectuses contain little, if any, forward-looking information in a document that can run hundreds of pages."); David B.H. Martin & Frederick J. Knecht, *The IPO Climate: In the Wake of Facebook, Are IPOs Really Broken?*, 16 WALL ST. LAW. (Aug. 2012), at 5 ("The SEC has deliberately avoided encouraging the use of financial projections in IPOs because of the potential inappropriateness of such information in that context."). In addition, SPAC mergers are not subject to the detailed communication rules governing IPOs. *See, e.g.*, Anna Pinedo, *What's the Deal? Special Purpose Acquisition Companies ("SPACs")*, MAYER BROWN (Aug. 10, 2020), https://www.freewritings.law/wp-content/uploads/sites/24/2020/08/Whats-the-Deal-SPACs.pdf [https://perma.cc/M85U-QP6Y]. As a result, commentators report that communication to the market when a SPAC merges is more freewheeling. Nonetheless, these communications are subject to Regulation FD, which creates a degree of uniformity in the information provided to market participants. It is unclear, therefore, whether the less regimented communication regime governing SPACs allows for any better bridging of information asymmetry than does the IPO process. We therefore do not address whether this difference in the regulatory regime provides SPACs with an advantage over IPOs.

76. *E.g.*, Matt Levine, *Maybe SPACs Are Really IPOs*, BLOOMBERG OPINION (Apr. 12, 2021), https://www.bloomberg.com/opinion/articles/2021-04-12/maybe-spacs-are-really-ipos [https://perma.cc/E7GJ-GKB9].

77. Bai et al., *supra* note 8, at 3. *See also* Joanna Glasner, *SPAC To The Future: How Blank-Check Acquirers Could Reshape Emerging Companies' Roles In Public Markets*, CRUNCHBASE (Oct. 19, 2020), https://news.crunchbase.com/news/spac-to-the-future/ [https://perma.cc/P2ZU-TPDB].

78. Statement of John Coates, Acting Director, Division of Corporation Finance, SPACs, IPOs and Liability Risk under the Securities Laws (Apr. 8, 2021), [hereinafter Statement of John Coates] https://www.sec.gov/news/public-statement/spacs-ipos-liability-risk-under-securities-laws [https://perma.cc/U28L-UXKX].

had PIPE investments from third parties in conjunction with their merger. PIPE investors are "brought over the wall" and given confidential information on which to make an investment decision.[79] They are thus able to engage in extended and detailed due diligence. Moreover, a PIPE investor can negotiate up front the size of a potential investment. With an understanding of how much it can potentially invest, a PIPE investor can devote commensurate resources to due diligence. Some companies going public in an IPO also offer investors this same opportunity to go "over the wall," obtain private information, and secure a certain allocation of shares, but the practice is far less common than it is among SPACs.[80]

For companies with important information that cannot be made public, or soft information that is best conveyed in more extended interactions with investors, the private placement process may be a better means of price discovery than the IPO roadshow. When a PIPE is made in a SPAC, the investment is disclosed to the market. If it is made at $10.00, roughly the redemption price, the PIPE is understood to provide an element of validation for public investors.

Validation may well occur as a result of PIPE investments, but it is not quite as straightforward as it appears. Typically, an investor in a PIPE requires that the information it receives will be made public in the SPAC's filings at the time the deal is announced. Unless this is done, the investor cannot trade in the company's shares without violating the insider trading prohibition. To the extent the information is made public, the presence of a PIPE does not necessarily convey any information that public investors cannot access and analyze on their own. Nonetheless, a PIPE investor has had one-on-one conversations with the target's management, which can convey soft information, such as the management's confidence, in a way that is not captured in slide presentations and other hard disclosures to the market. In addition, a public investor may economize on its own time and effort spent analyzing publicly available information by implicitly relying on the PIPE investor's due diligence. Finally, if a PIPE investor is well-recognized as a successful investor, others can rely on the judgment conveyed by the fact that it invested in a PIPE.

3. Earnouts for Target Shareholders

A third way in which SPACs respond to asymmetric information is earnouts for target shareholders. About 53% of mergers in our 2019-20 Merger Cohort include such earnouts. These earnouts typically provide that if the combined company's post-merger share price reaches specified thresholds—often $12,

79. Under the SEC's Regulation FD, investors that receive material non-public information about a company (that is, investors "brought over the wall") must agree to keep the information confidential and not to trade publicly in the company's securities until the information becomes publicly disclosed. *See Bringing Investors Over the Wall*, THOMSON REUTERS PRACTICAL LAW: CORPORATE & SECURITIES (2021).

80. *Id.* (noting that wall-crossing is "increasingly prevalent as a favored strategy to manage market volatility in the context of underwritten public offerings").

$14, and $16—within three to five years after the merger, additional shares will be issued. An earnout can potentially address asymmetric information by deferring the pricing of the merger until the post-merger company has performed and the market has had a chance to evaluate it. IPOs could engineer similar earnouts, for instance, by issuing warrants to pre-IPO shareholders, but again, this is less common in practice.

Some of these price discovery mechanisms may be attractive to some SPACs and their targets, especially those that do not have the option of an IPO. As we discuss in Section IV.D below, however, companies may get nearly all of these benefits without the costs embedded in SPACs by going public in an IPO or direct listing that incorporates elements of current SPAC structures.

C. Price Certainty, Deal Certainty, and Speed

SPAC advocates also argue that SPACs offer greater price certainty, deal certainty, and speed than do IPOs. For instance, as one Bloomberg commentator has written, "the SPAC merger has one really good feature for the target company, which is that, when you sign the merger agreement, you know you're going public, and you know the price."[81] Similarly, a National Public Radio report on SPACs cites SPAC "speed" as one of the "built-in advantages" of the transaction compared to traditional IPOs.[82] We cannot compare IPOs and SPACs on these dimension with any precision, but we can say that the claims about SPAC certainty are overstated.

1. Price Certainty

Perhaps the most common claim in favor of SPACs over IPOs is that SPACs offer certainty with respect to the price that target shareholders will, in effect, receive for their shares. The claim that a SPAC offers price certainty, however, is overstated. It is true that a SPAC merger agreement appears to set a price or share exchange ratio for the merger well before the closing of the merger. In contrast, the offering price of an IPO is not set until the day before the issuer's shares begin trading. There is less certainty in the SPAC price than meets the eye, however. SPAC mergers involve a multi-party sequential negotiation between the SPAC, the target, large public shareholders, and often PIPE

81. Matt Levine, *Bill Ackman Wants a Mature Unicorn*, BLOOMBERG (June 23, 2020, 11:59 AM), https://www.bloomberg.com/news/newsletters/2020-06-23/money-stuff-bill-ackman-wants-a-mature-unicorn https://perma.cc/AM3E-ZCCE]. *See also A Surge of SPACs in a Turbulent Economic Climate*, BAKER BOTTS (July 27, 2020), https://www.bakerbotts.com/thought-leadership/publications/2020/july/a-surge-of-spacs-in-a-turbulent-economic-climate [https://perma.cc/YC28-QUGW] ("A SPAC transaction provides a target company with a measure of certainty that a traditional IPO cannot."); Jasinski, *supra* note 4.

82. Camila Domonoske, *The Spectacular Rise of SPACs: The Backwards IPO That's Taking over Wall Street*, NPR (Dec. 29, 2020, 5:00 AM), https://www.npr.org/2020/12/29/949257672/the-spectacular-rise-of-spacs-the-backwards-ipo-thats-taking-over-wall-street [https://perma.cc/CR3Q-F5YV].

investors. SPAC merger agreements are often amended as a SPAC negotiates with public investors and potential PIPE investors to ensure that there will be sufficient cash in the SPAC at the time of the merger.[83] Price certainty is achieved only after a final merger and PIPE agreements are reached, which may be only a few weeks prior to the merger.

Consider for instance Nesco Inc., which on July 30, 2019 merged with Capitol Investment Corporation IV, the fourth SPAC run by a veteran SPAC sponsor. The original merger agreement was disclosed in an 8-K filing on April 8, 2019, but that agreement was amended on July 11, 2019,[84] less than three weeks prior to the merger closing. Among other key changes, the amended agreement eliminated $75 million in cash consideration that the target's owners were to receive as part of their compensation and substituted this with 7.5 million additional SPAC shares to be issued[85]—shares which quickly saw their price drop from $10 to $3 following the merger.[86] Similarly, the amended agreement introduced a requirement that the target's owners make a new cash investment of $25 million (by purchasing 2.5 million additional new shares) at the time of the merger.[87] Thus, while the deal may have looked certain as of April 8, the final terms, worked out just weeks before closing, were substantially less advantageous to the target's owners.

Furthermore, even after final merger and PIPE agreements are signed, the total amount of net cash a target receives depends on how many shares the SPAC redeems. That is not known until shortly before the merger closes. So, SPACs offer no certainty regarding how much net cash they will provide to a target. Redemptions also influence the amount of net cash per share a target receives. The amount of net cash per share is in effect the price at which the target will sell its shares. If a target agrees to a one-for-one share exchange and expects this to yield $8.00 in net cash for each SPAC share, and then 75% of the SPAC's publicly held shares are redeemed, the target will receive only $5.00 per share in net cash.[88] So, just as with an IPO, price uncertainty exists until the last minute.

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83. *See The Resurgence of SPACs: Observations and Considerations*, WACHTELL, LIPTON, ROSEN & KATZ, (Aug. 20, 2020), https://www.wlrk.com/webdocs/wlrknew/ClientMemos/WLRK/WLRK.27066.20.pdf [https://perma.cc/E7QW-UH22] (stating that renegotiations are common).

84. Capitol Inv. Corp. IV, Current Report (Form 8-K) (July 11, 2019).

85. *Id.* at 1.

86. *CTSO Historical Data*, NASDAQ, https://www.nasdaq.com/market-activity/stocks/ctos [https://perma.cc/7WRE-96HQ]. Nesco now trades under the ticker CTSO, reflecting a name change.

87. Capitol Inv. Corp. IV, Current Report, *supra* note 84, at 2.

88. Assume that at the time the target signs the merger agreement, the SPAC has 100 shares outstanding, 20 of which are the sponsor's promote and 80 of which are public shares for which there is $10.00 each in the SPAC. The SPAC will have $8.00 per share in cash. If 60 of the 80 public shares are redeemed, the SPAC will have 40 shares outstanding, 20 of which are public shares with $200 remaining in the SPAC. This comes to $5 per SPAC share. During the period of the SPAC bubble, from Fall 2020 through Spring 2021, pre-merger SPAC share prices were above $10 and often rose further in response to a merger announcement. As a result, SPAC sector participants perceived there to be greater certainty during that period. As of the time this Article goes to press, redemptions are comparable to those we observed for the 2019-20 Merger Cohort. Furthermore, many of the mergers occurring now and experiencing high redemptions were originally announced in January and February of 2021—during the

Some SPAC merger agreements ameliorate uncertainty regarding redemptions by specifying a minimum amount of cash that must be in the SPAC as a condition to closing. Targets, however, may waive that condition if it becomes clear that their alternative is to forgo the opportunity to go public. In addition, a small number of merger agreements provide that the sponsor will cancel a fixed number of its shares if the SPAC has less than a specified amount of cash as of the time of the merger, and in a few SPACs, the underwriter has agreed to adjust its fee in response to redemptions. These are just partial measures, however, and they are rare. Unless the sponsor cancels its shares and the underwriter reduces its fee in proportion to redemptions, these costs create uncertainty regarding the net cash per share that a target will receive.[89] And even if these adjustments were made, there would still be uncertainty due to the fixed number of warrants overhanging however many shares are not redeemed. Thus, claims about price certainty in SPAC mergers are overstated.

2. Deal Certainty

Because there is nearly always a price at which the IPO or SPAC could be completed, deal certainty is really about price risk—that is, the risk that the price is unacceptable to the issuer or SPAC target. As we describe above, redemptions reduce the amount of net cash per share in a SPAC and therefore create uncertainty for targets regarding the price at which they, in effect, will sell their shares in the market. Among the forty-seven SPACs in our Cohort that merged, eight merged with $10 million or less in cash as a result of very high redemptions and little to no replacement of cash with PIPEs. In many mergers, the agreement allowed the target to cancel the deal if there is insufficient cash in trust after redemptions. Yet, some targets choose to waive these conditions, effectively selling their shares for a few dollars each. If a SPAC target accepts a deal in which it sells shares for a fraction of the price it might have expected, then this reflects the preferences of that company, not the "deal certainty" of the SPAC.

Furthermore, SPAC deals can and do fail. TGI Fridays signed a SPAC merger deal only to see it fall through when SPAC investors chose en masse to redeem rather than hold their shares.[90] Some SPAC mergers fail even before

peak of the bubble. Thus, while there may have been a perception that SPACs offered certainty, it was an illusion. If a target and a SPAC sponsor can close a deal while markets remain "hot," then it will likely go smoothly. This is no different from what is true for traditional IPOs.

89. The number of publicly traded warrants outstanding is even more difficult to adjust, as modifying these requires agreement among a disparate group of public warrant holders.

90. *See SPAC Scraps $380M TGI Friday's Deal*, PITCHBOOK (Apr. 8, 2020), https://pitchbook.com/newsletter/spac-scraps-380m-tgi-fridays-deal [https://perma.cc/3YLR-5BAH]. 3.8 million shares were redeemed in connection with an extension vote associated with the proposed TGI Friday merger. Allegro Merger Corp., Current Report (Form 8-K) (Jan. 6, 2020). Allegro then held a second extension vote on the same proposed TGI Friday merger, at which it again offered its investors the opportunity to redeem. The exact redemption numbers at this vote were not disclosed, but immediately following it, the SPAC indicated that the merger would be cancelled due to "extraordinary market conditions and failure to meet necessary closing conditions." Allegro Merger Corp., Current Report (Form 8-K) (Mar. 31, 2020).

getting to this point. Saban Capital Acquisition Corporation, for instance, signed a merger agreement to take Sim Video International public, only to see the agreement cancelled, and the SPAC subsequently liquidated, due to what the CEO of Sim International described as "volatile market conditions" and "difficulty getting everything completed."[91] Two other SPACs in 2019 and 2020 likewise liquidated after signing merger agreements intended to take their target companies public.[92] Finally, Chuck E. Cheese Pizza signed a merger agreement to go public with the SPAC Leo Holdings, only to see that deal fall through,[93] and Leo to subsequently take a different company public.

Overall, therefore, SPAC mergers do not provide as much deal certainty as they may appear to provide. On the other hand, a sponsor can provide more certainty if it commits to replace cash lost to redemptions or attracts sufficient third-party investment to do so.

3. Speed

A related claim that commentators make in favor of SPACs is that a company can go public through a SPAC more quickly than it can in an IPO.[94] Other commentators, however, disagree that there is a meaningful difference.[95] As one law firm representing SPACs commented:

> the differences between the minimum time necessary to get to closing [for SPACs, IPOs, and direct listings] are not meaningful[]. . . . The practical difference is that companies preparing for an IPO or direct listing often begin preparing for the

91. Etan Vlessing, *Panavision, Sim and Saban Capital Acquisition Abandon Merger Plans*, HOLLYWOOD REP. (Feb. 28, 2019, 8:06 AM), https://www.hollywoodreporter.com/business/business-news/panavision-sim-saban-capital-acquisition-abandon-merger-plans-1191387/ [https://perma.cc/2PRM-BNGB]. *See also* Saban Capital Acquisition Corp., Current Report (Form 8-K) (Feb. 28, 2019).

92. These other two failed mergers were Sentinel Energy's agreement to take Strike Capital LLC public, Sentinel Energy Services Inc., Current Report (Form 8-K) (Nov. 6, 2019), and Vantage Energy Acquisition Corporation's agreement to take QEP Energy Company public, Current Report (Form 8-K) (Feb. 20, 2019) (citing "the deterioration in commodity prices and that it was unlikely the conditions to closing would be satisfied"). The remaining two liquidated SPACs never proposed merger agreements. *See* Regalwood Global Energy Limited, Current Report (Form 8-K) (Dec. 4, 2019); Fellazo Inc., Current Report (Form 8-K) (Apr. 8, 2020). There were no instances in our sample where a target company directly invoked a minimum cash condition to cancel a SPAC merger after the final vote and redemption opportunity for SPAC investors. Nevertheless, both Allegro Merger Corporation and Vantage Energy explicitly cited likely failure to meet closing conditions as reasons for calling off their mergers, presumably indicating that both target companies and SPAC management saw little hope for the SPACs to satisfy minimum cash conditions following redemptions. Allegro Merger Corp., Current Report (Form 8-K) (Apr. 1, 2020).

93. Jonathan Maze, *Chuck E. Cheese's Parent Company's Merger Deal Collapses*, RESTAURANT BUS. (July 29, 2019), https://www.restaurantbusinessonline.com/financing/chuck-e-cheeses-parent-no-longer-going-public [https://perma.cc/3WM5-BUZM].

94. John Luttig, *SPAC Attack: Everything a Founder or Investor Should Know*, LUTTIG'S LEARNINGS (July 17, 2020), https://luttig.substack.com/p/spac-attack-everything-a-founder [https://perma.cc/ZX2U-CU5F].

95. *See* Gerry Spedale & Eric Pacifici, *9 Factors to Evaluate When Considering a SPAC*, LAW360 (Mar. 11, 2019, 2:13 PM), https://www.gibsondunn.com/wp-content/uploads/2019/03/Spedale-Pacifici-9-Factors-To-Evaluate-When-Considering-A-SPAC-Law360-03-11-2019.pdf [https://perma.cc/S7SF-GB7L].

> needed financial statements, internal and financial controls and any necessary staffing changes earlier than companies that pursue . . . SPACs.[96]

It is hard to accurately measure whether SPACs are faster than IPOs, since both processes involve prep work before the deals are publicly announced. Also, if different types of firms are going public via SPACs versus IPOs, then differences in speed may have more to do with the specifics of the firms rather than the SPAC versus IPO process. Claims about relative time to market are thus debatable.[97]

As a general matter, we cannot say that SPACs never offer price or deal certainty or that they never offer greater speed over IPOs. In some cases, they may. Some firms going public may therefore choose a SPAC over an IPO—again, so long as the SPAC shareholders bear most of the costs. And for some firms that do not have the IPO option, these potential features of a SPAC, along with the price discovery features, may lead them to accept some costs inherent in SPACs. As we discuss below, however, the advantages that SPACs offer can be obtained in a less costly going-public transaction.

V. Can the Advantages of SPACs Be Achieved Without the Costs?

The analysis above raises the question whether SPACs will continue to be used when SPAC shareholders stop taking losses and targets must bear more of the costs inherent in SPACs. In this Part, we consider two possibilities: a less costly and more incentive-aligned SPAC; and an IPO or direct listing that incorporates the potentially attractive features of SPACs without the cost.

A. A Better SPAC

One can certainly imagine a better SPAC. It would be one that (a) issues no warrants or rights, (b) provides the sponsor with compensation that is both lower, adjusted for redemptions, and aligned with post-merger share value, (c) pays its underwriter on the basis of nonredeemed shares, (d) includes a large PIPE by the sponsor and third parties, and (e) reduces the generally unidentified fees that many SPACs pay at the time of their merger. Among the nearly 600 SPACs that

96. *See* E. Ramey Layne, Brenda Lenahan, S. Gregory Cope & Scott D. Rubinsky, *Alternative Routes to Going Public: Initial Public Offering, De-SPAC or Direct Listing*, VINSON & ELKINS (2020), https://www.jdsupra.com/post/fileServer.aspx?fName=e97dc3dd-0101-408c-a630-1f790ffd30c9.pdf [https://perma.cc/4CRX-69MC]; *see also* Pinedo, *supra* note 75, at 2 ("merging with and into a SPAC may be faster than undertaking a traditional IPO; however, this will depend upon the nature of the negotiations . . . .").

97. Some justifications given for supposed SPAC speed advantages are clearly incorrect. For instance, some commentators assert that SPACs are faster because they have lower paperwork requirements. This is incorrect. As one leading law firm that advises on SPAC transactions commented: "The [SPAC] proxy statement includes substantially the same information for the merger parties as would be included in an IPO registration statement for the company going public (including PCAOB audited financial statements)." Layne, et al., *supra* note 96 at 5. Other commentators assert that SPACs are faster because a company going public needs only to pitch a single party, the SPAC sponsor, rather than many investors as in an IPO. In reality, this too is dubious, given that SPACs have their own roadshows to sell proposed mergers. *See supra* note 18 and accompanying text.

have been formed since June 2020, a few have adopted incremental improvements in some of these areas, but claims of serious innovation in the SPAC market are inaccurate.[98] SPACs have been surprisingly static and standardized since they took their current form a decade ago.

There is no need for a SPAC to issue free warrants or rights to its IPO investors if it can attract investors that are actually interested in its prospects that it will negotiate a good deal with an attractive merger target. As we have explained, warrants are compensation paid to hedge funds that park cash in a SPAC so that it can establish itself as a public company. Those investors have no interest in its eventual merger and either redeem or sell their shares before the merger closes. With better incentive alignment and lower costs, one would think that worthy sponsors, with the help of their underwriters, should be able to attract IPO investors with a longer-term interest. After all, this is what they must do at the time of a SPAC's merger anyway. Approximately 6.6% of SPACs (46 out of 708) that have gone public between July 1, 2020 and November 1, 2021 have offered no warrants or rights.[99] Most have been SPACs focused on biotech that attracted fundamental investors that specialize in biotech investing.[100] But others, with prominent sponsors, have been less specialized.[101] Reducing sponsors' compensation should not be difficult. The average value of sponsor promotes at the time of a merger is $54 million, which amounts to a mean return on sponsor investments of 433%. Although sponsors contribute labor in addition to cash, it is hard to believe that this is the market-clearing price for spending at most two years sponsoring a SPAC, even for a high-quality sponsor. In large SPACs, which tend to be sponsored by large funds, it is not unusual for promotes to top $100 million. Improving compensation structures to better align sponsor incentives with post-merger share value is also an option. As we show in other

98. Perhaps because of the prominence of a few nonstandard SPACs, one often sees statements and even headlines stating that SPACs are "evolving" or that there is a wide variety of SPACs. *See, e.g.*, *Current Trends in SPAC Transactions*, BRYAN CAVE LEIGHTON PAISNER & HOULIHAN LOKEY (Feb 10, 2021), https://www.bclplaw.com/images/content/1/9/v2/198461/BCLP-HL-Presentation-SPAC-Transactions-Feb-10-2021.pdf [https://perma.cc/VWT2-5RD5]; *Making Waves: The Evolution of SPACs*, CREDIT SUISSE (2020) https://www.credit-suisse.com/us/en/investment-banking/ibcm/corporate-insights/making-waves.html [https://perma.cc/HM7J-2KLV]. Indeed, immediately, after Pershing Square Tontine Holdings went public, there was an outpouring of such claims, despite the fact that at the time it was the *only* nonstandard SPAC on the market. Since that time, a few other SPACs have launched with non-standard structure, such as the CAPS and SAIL structures promoted by Evercore and Morgan Stanley. To date, these SPACs have not yet completed acquisitions, nor have they been emulated in meaningful ways in other SPACs. They remain a few counterexamples comprising well under 1% of modern SPAC IPOs. For more details on the CAPS and SAIL structures, see Matt Macfarland, *Evercore Looking to Tweak SPAC Model with 'CAPS' Offerings*, S&P GLOB. MKT. INTEL. (Oct. 21, 2020) https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/evercore-looking-to-tweak-spac-model-with-caps-offerings-60852424 [https://perma.cc/BYK8-YRM] (CAPS) and Sonali Basak & Crystal Tse, *Morgan Stanley, Evercore Tweak Payouts to Spread the SPAC Wealth*, BLOOMBERG (Mar. 6, 2021), https://www.bloomberg.com/news/articles/2021-03-06/morgan-stanley-evercore-tweak-payouts-to-spread-the-spac-wealth [https://perma.cc/9UZP-K379].

99. SPACTRAX, https://www.spactrax.com [https://perma.cc/YAX4-DEXJ] (2021).

100. *See, e.g.*, Therapeutics Acquisition Corp., Prospectus (Form 424(b)(4)) (July 7, 2020); HealthCor Catalio Acquisition Corp., Prospectus (Form 424(b)(4)) (Jan. 28, 2021).

101. Thoma Bravo Advantage, Prospectus (Form 424(b)(4)) (Jan.15, 2021); Khosla Ventures Acquisition Co., Prospectus (Form 424(b)(4)) (Mar. 4, 2021).

research, this requires a combination of conditioning a sponsor's promote on the achievement of post-merger price targets within a short timeframe, such as one or two years post-merger, along with a sizeable investment by the sponsor in new shares purchased for $10.00 each.[102]

The structure of underwriting fees and other fees paid in connection with the merger can also be improved. As we have explained, underwriters typically charge a 5.5% fee regardless of whether the shares they have underwritten are later redeemed. Typically, 3.5% of the fee is contingent on the SPAC closing a merger, which occurred in 90% of SPACs from January 2019 through June 2020. In some cases, however, the underwriter waives part of its backend fee if there are a lot of redemptions, and in a few cases, it commits upfront to give up some of its fee if redemptions are high. This is salutary in multiple ways. The SPAC and its target, collectively, pay only for equity they receive; the underwriter has an incentive to seek investors with a long-term interest in the SPAC's prospects; and the underwriter would hesitate to underwrite a SPAC that it does not think will generate such interest. This fee arrangement should be universal.

Finally, a large PIPE in relation to a SPAC's IPO can dramatically reduce SPAC costs as a percentage of net cash SPACs deliver. An encouraging example of this is the Altimeter SPAC and its proposed merger with Grab, set to close in the second half of 2021. Altimeter raised $500 million in its IPO, and had a PIPE of over $4 billion.[103] The sponsor's promote in this deal is thus on the order of 3% of cash delivered (depending on eventual redemptions), far smaller in percentage terms than in any SPACs in our sample. Unfortunately, while PIPE funding has grown somewhat since our sample period, PIPEs this large compared to SPAC IPO sizes are rare. Also, as we explain in Part VII, PIPE funding has recently declined relative to its peak during the SPAC bubble.[104]

In sum, a less costly, better aligned SPAC is feasible. The elements are already present in a small number of SPACs. It remains to be seen how well market discipline on SPACs will lead sponsors to organize SPACs along these lines. So far, the SPAC structure has been essentially immune to market pressure from PIPE investors and nonredeeming shareholders.[105]

102. We address sponsor compensation in a separate paper. *See* Klausner & Ohlrogge, *supra* note 30.

103. Altimeter Growth Corp., Current Report (Form 8-K) (Apr. 12, 2021)

104. U.K. regulators recently took a step in the wrong direction, in our opinion, by mandating a minimum SPAC IPO size (of £100 million), thus making it more difficult to conduct a very streamlined SPAC with a small IPO, low costs, and a large PIPE. Ortenca Aliaj & Aziza Kasumov, *Spac Boom Under Threat as Deal Funding Dries Up*, FIN. TIMES (Apr. 9, 2021), https://www.ft.com/content/19c021a5-a758-489e-875a-de5c99bbfbfe [https://perma.cc/JV7Y-BWER].

105. As Kristi Marvin, CEO of SPAC Insider, recently said, "There hasn't been much friction lately and therefore, bankers and sponsors haven't felt much pressure to innovate. It's the friction that forces you to find a solution." SPAC INSIDER NEWSLETTER (Mar. 1, 2021) (on file with authors). Since the SPAC bubble deflated several months ago, there still has been no innovation.

B. Integration of SPAC Features into IPOs and Direct Listings

The SPAC experience may lead to changes in IPOs and direct listings. If SPACs truly provide value, some of their features can be integrated into these other means of going public. To the extent a sponsor plays an important role in identifying a company ready to go public, advising the company after it goes public, and working with underwriters, the sponsor can perform the same roles for a company going public in an IPO. This might be called a "sponsored" IPO. The sponsor would identify a company in which it wants to invest, help bring public, and support thereafter. The sponsor would then seek third-party PIPE investors for a private placement. Once the sponsor has identified an interested target and has lined up an amount of equity investment satisfactory to the target as a minimum acceptable equity infusion, the sponsor would approach an underwriter for an IPO.[106] Or, alternatively, if a company wanted to go public in a direct listing with the aid of a sponsor, the structure would be even simpler. The sponsor would help raise equity through a private placement and serve as an advisor to the extent needed.

This arrangement simply adds elements of a SPAC to an IPO or direct listing without the costs built into in the SPAC structure. The private placement investors in an IPO will have done extensive due diligence, just as they do when investing in a SPAC, and their purchase can validate the transaction to the public market, just as it can with a SPAC. Locking in funding in advance would promote deal and price certainty to the same extent it does with a SPAC. In fact, private placements are already used in conjunction with some traditional IPOs, though not commonly. Dun & Bradstreet's 2020 IPO, for example, was accompanied by a private offering, in which a consortium of investors purchased shares at a percentage discount to the IPO price, contingent on the closing of the IPO.[107] Likewise, Uber's IPO included a commitment by PayPal to purchase $500 million in shares, contingent on the IPO closing.[108] More recently, Endeavor Group Holdings conducted an IPO of roughly $600 million with a concurrent

106. The underwriting of a sponsored IPO could be on a firm commitment or a best-efforts basis. For companies that are shut out of the IPO market, the latter may be their only alternative. But a best-efforts underwriting would in effect be the same as what we see today in the underwriting of a SPAC. Since a SPAC makes no guarantee regarding redemptions and typically does not adjust its costs to reflect redemptions, it is in effect providing a very expensive best-efforts underwriting.

107. Dun & Bradstreet Hold., Inc., Amendment No. 3 to Form S-1 Registration Statement (Form S-1A), at 12 (June 26, 2020). *See also Club IPOs and Insider Participation in IPOs*, MORRISON & FORRESTER LLP (Dec. 2016), https://media2.mofo.com/documents/161213-insider-participation-ipos.pdf [https://perma.cc/L7YS-RY6P].

108. *See, e.g.*, Uber Technologies, Inc., Amendment No. 1 to Form S-1 Registration Statement (Form S-1A), at 6 (Apr. 26, 2019); *see also* Black Box Incorporated, SEC No-Action Letter § 3 [4D Tax-Advantaged Securities Appendix F3] (June 26, 1990). We see similar practices in the capital markets of other countries as well. The U.K., much of Europe, Hong Kong, and India use "cornerstone," or "anchor," investors in IPOs, which often make binding commitments to invest in IPOs. We have simply added a sponsor to this arrangement, and if the underwriter were to perform the role of the sponsor, so much the better.

private placement of about $1.8 billion priced in advance at the top of the public offering range.[109]

SPACs' use of earnouts could be replicated in IPOs as well. Company management and investors could be issued out-of-the-money options or warrants with strike prices at levels typical of SPAC earnouts today.

Inserting a sponsor into an IPO or direct listing may seem odd, or inconsequential—and it may be—but if a sponsor truly adds value in a SPAC, then it would presumably add value in these contexts as well. Its role here is the same, except that it would search for a company to bring public *before* it raises funds. It would negotiate compensation with the company it helps bring public, which presumably would structure that compensation to align the sponsor's incentives with shareholder interests. Without the prospect of a sponsor losing its initial investment if it fails to propose a merger, the sponsor's endorsement of a deal would likely be a more credible signal of a company's quality than it is in a SPAC, and if the sponsor invests at the IPO price, it would validate the price as well. Finally, the sponsor's deal with the company would presumably include a commitment to remain engaged with the company, perhaps through a board seat as is currently common with SPACs.

Because there would be no parking of funds for up to two years, as there is in a SPAC, there would be no need to compensate IPO investors with dilutive warrants. The company going public would issue only shares. Additionally, there would be no expenses associated with paying an underwriter to sell shares that are later redeemed. Other transaction fees could well be lower as well. In a SPAC, the underwriter often charges additional fees to serve as an advisor at the time of the merger. The SPAC often hires additional advisors as well. And the target has a set of advisors as well. In an IPO or direct listing, the company going public would be spending its own money on these services and presumably would pay only for services that are needed.

Will we see sponsored IPOs or direct listings develop? That depends on a number of factors. The most import is whether SPAC investors continue to accept deals that leave them bearing SPAC costs. If so, then there will be little reason for SPACs to innovate. But it is hard to believe SPAC shareholders will continue volunteering to bear losses for much longer. Once SPAC shareholders cease subsidizing targets going public, then new questions will arise. First, does a sponsor actually add value that owners of target companies would be willing to pay for? We offer no judgment on this question. Another question is whether the SPACs will continue to enjoy their regulatory preferences with respect to projections and other forward-looking statements, and if so, whether owners of target companies will be willing to bear the costs inherent in SPACs in exchange for that benefit. Finally, enhanced disclosure along the lines we propose in Part VI may affect the extent to which SPACs remain attractive compared to alternatives.

109. Endeavor Grp. Hold., Inc., Amendment No. 1 to Form S-1 Registration Statement (Form S-1A) at 23 (April 20, 2021).

VI. Implications for Regulatory Intervention

We have reached two conclusions that warrant regulatory intervention. First, SPACs enjoy regulatory preferences over IPOs that were inadvertent and that have no policy justification. Second, the losses that nonredeeming SPAC shareholders have incurred suggest that material information may not be provided to them in sufficiently transparent form. In this Part, we propose two sets of regulatory reform: First, we propose eliminating the differential regulatory treatment of SPACs and IPOs. Second, we propose that SPACs be required to provide transparency regarding their pre-merger net cash per share, the terms of PIPE investments, and the sponsor's and management's financial interest in a proposed merger.

A. The Uneven Playing Field Between SPACs and IPOs

There are two areas in which the securities laws favor SPACs over IPOs. One is the treatment of financial projections and other forward-looking statements. The other is the application of Section 11 of the Securities Act, which applies a stricter standard of liability to issuers, underwriters and individual directors and officers in connection with a public offering.

1. Projections

The legal treatment of SPACs and IPOs differs with respect to projections and other forward-looking statements. Such statements are permitted in both transactions, but as discussed in Part IV, there is a widely held understanding that the Private Securities Litigation Reform Act's (PSLRA) safe harbor applies to SPACs whereas it does not apply to IPOs.[110] The safe harbor provides that, when accompanied by appropriate cautionary language, a company making a forward-looking statement without actual knowledge of its falsity will not be held liable in a private action brought under the securities laws. Projections are commonly included in SPACs' investor presentations and proxy statements, and are essentially never included in IPO prospectuses.

This difference in treatment is not the result of a deliberate policy decision by Congress or the SEC. The PSLRA's safe harbor excludes "blank check companies" from its coverage. But a few years earlier, the SEC had defined "blank check companies" very narrowly to target penny stock fraud, and SPACs were designed to fall outside that definition. There is reason to believe that Congress was unaware of how narrowly "blank check stock" had been

110. Projections used in IPOs are covered by the similar judicial doctrine of "bespeaks caution." *See supra* note 74.

defined.[111] There is also no way Congress would have anticipated that SPACs would become a functional equivalent of an IPO from the perspective of companies going public. The Acting Director of the SEC's Division of Corporate Finance recently raised doubts about the applicability of the safe harbor to SPAC mergers.[112] As he explained, there is no policy justification for treating a SPAC merger differently from an IPO. From a functional perspective, a SPAC merger is the target's IPO. When the SPAC proposes a merger, the sponsor and the target's management pitch the transaction to potential investors just as an issuer does in an IPO roadshow. During the period of our study, nearly all shareholders that invested in a merger bought their shares after the merger was announced, presumably in response to what was disclosed about the target, including its projections. Hence, the Acting Director raised the possibility that the SEC will issue regulations, or the staff may provide guidance, regarding the application of the safe harbor to SPACs, and perhaps even to IPOs.[113]

We take no position on the extent to which forward-looking statements should be protected in SPACs or IPOs. For companies that face challenges bridging information asymmetries with potential shareholders, as some SPAC targets reportedly do, providing projections and other forward-looking statements may be an effective means of communicating value. This is especially true of targets that are "pre-revenue" or low-revenue.[114] On the other hand, Congress's exclusion of IPOs from the safe harbor reflects a concern regarding the integrity of information provided to potential investors when a company makes its initial entry to the public markets. The treatment of SPACs and IPOs, however, should be the same. There is no policy reason for the rules to differ.

The statutory terms of the safe harbor give the SEC the authority to level the playing field in either direction. The statute excludes "offering[s] by blank check companies" and authorizes the SEC to define that term. The SEC's current definition, adopted in an entirely different context before the safe harbor was enacted, does not cover SPACs.[115] Hence, SPACs appear to qualify for the safe harbor. But the SEC has the authority to tailor a definition of "blank check

111. *Id.* At the time the PSLRA was enacted, the SEC had limited the definition of blank check company to a company that issues "penny stock," which was defined to be a company with total net tangible assets of $5 million or less. That definition remains in place today. Congress, however, may well have been unaware of this definition. The House Conference Report on the PSLRA states that the safe harbor "does not extend to an issuer who . . . makes the statement in connection with a 'blank check' securities offering . . . *or* 'issues penny stock.'" H.R. REP. NO. 104-369, at 46 (1995) (emphasis added). This language suggests that the safe harbor would not apply to a blank check company regardless of whether it issues penny stock.

112. Statement of John Coates, *supra* note 78

113. The acting director speculated: "Is guidance needed about how projections and related valuations are presented and used in the documents for any of these paths?" referring to both SPACs and IPOs as paths to going public. *Id.*

114. Bai et al., *supra* note 8. *See also* Glasner, *supra* note 77.

115. Rule 419(a)(2), codified at 17 C.F.R. § 230.419 (2021), defines blank check companies as companies that issue penny stocks, which would not include SPACs. For more information, see Carl W. Schneider & Jay A. Dubow, *Forward-Looking Information—Navigating in the Safe Harbor*, 51 BUS. LAW. 1071, 1076 (1996).

company" to exclude SPACs.[116] Conversely, if the SEC wanted to allow IPOs to benefit from the safe harbor, as SPACs currently do, the statute authorizes it to do so. The exclusion of IPOs from the safe harbor is prefaced by the language "[e]xcept to the extent otherwise specifically provided by rule, regulation, or order of the Commission."[117]

Treating SPACs and IPOs similarly with respect to projections, however, entails some complications. First, state law may require disclosure of projections if SPAC management considered them in deciding to propose a merger, whereas state law does not require projections in the context of an IPO. Second, whereas issuer generally do not provide projections in IPOs, underwriters do, and those projects are based on information provided by the issuer. The SEC would need to take account of these factors in leveling the SPAC-IPO regulatory playing field.[118]

2. Section 11 of the Securities Act

The other important way in which SPAC mergers are regulated differently from IPOs is the application of Section 11 of the Securities Act. Section 11 provides a cause of action to purchasers of registered shares where there is a material misstatement or omission in a registration statement.[119] Fourteen percent of IPOs in the past ten years have been challenged in Section 11 lawsuits.[120] When a SPAC enters into a business combination with a target company, however, Section 11 liability is limited for three reasons.[121]

First, in some SPAC mergers, the SPAC issues unregistered shares to target shareholders. Some or all of these shares are later registered by the combined company at some point after the merger has been consummated. In those transactions, misstatements related to the pre-merger SPAC and the terms of the merger would not be subject to Section 11 claims because post-closing registration statements typically would not address those matters. In other

116. 15 U.S.C. § 78u–5(i)(F)(5) (2018). In addition, the Acting Director suggested that the SEC could simply deem a SPAC merger to be an IPO. As he pointed out, because the phrase "initial public offering" is not defined in the PSLRA or elsewhere in the Securities Act of 1933, or any existing SEC rule, it is possible that a SPAC merger is properly viewed as an initial public offering under current law, in which case the PSLRA's safe harbor would not apply to a SPAC merger. Statement of John Coates, *supra* note 78.

117. 15 U.S.C. § 78u–5(b) (2018).

121. *See* Amanda Rose, SPAC Mergers, IPOs and the PSLRA Safe Harbor: Unpacking Claims of Regulatory Arbitrage 48-50 (Dec. 14, 2021) (unpublished manuscript) (https://ssrn.com/abstract=3945975) [https://perma.cc/5B75-T55L].

119. Section 12 of the Securities Act provides a cause of action for material misstatements or omissions in a prospectus or an oral communication. The application of Section 12 parallels that of Section 11 discussed here.

120. Michael Klausner, Sam Curry & Jason Hegland, *IPO Litigation Risk*, D&O DIARY (June 28, 2021), https://www.dandodiary.com/2021/06/articles/securities-litigation/guest-post-ipo-litigation-risk [https://perma.cc/H3MA-78W9].

121. For a tally of 2020 closed SPAC mergers taking each of these forms, see *2020 De-SPAC Debrief*, FRESHFIELDS 12, 14 (Jan. 11, 2021) http://ssl.freshfields.com/noindex/connect/docs/0121/De-SPAC-Debrief-2021-01-10.pdf [https://perma.cc/3TFV-M43U].

mergers, the SPAC issues registered shares to target shareholders. In those transactions, target shareholders potentially have Section 11 claims, but only to the extent there are misstatements or omissions of which they were unaware. To the extent alleged misstatements or omissions concern the target's business, these claims will likely be weak at best. The same would be true of misstatements and omissions regarding the SPAC—including cash per share in the SPAC—to the extent target shareholders have done due diligence on the SPAC.[122] In yet other transactions, the SPAC is reorganized into a new corporate entity concurrently with the merger, and that new entity registers shares that it issues to SPAC and target shareholders. In those transactions, SPAC and target shareholders potentially have a Section 11 claim based on the disclosures in the registration statement about the SPAC, the target, and the terms of the merger.

Second, except in transactions involving newly issued shares to both SPAC and target shareholders, Section 11's tracing requirement poses a barrier. In a conventional public offering, a plaintiff has standing to sue under Section 11 only if it either bought shares directly in a registered offering or it can trace its shares to the registered offering. In an IPO, where the issuer has no other shares trading in the market, tracing shares to the IPO is not an issue. But in a SPAC merger, even where target shareholders receive registered shares, once those shares are sold, they mix with shares that have been trading since the SPAC's IPO. Thus, except for target shareholders that still hold registered shares that the SPAC issued to them in the merger, plaintiffs will face the obstacle of tracing their shares to the registration statement covering shares issued in connection with the merger. On the other hand, courts often decline to grant motions to dismiss based on tracing challenges, so the tracing requirement will not necessarily preclude an attractive settlement for shareholders. In addition, in a recent case involving tracing in a direct listing, the court held the policy behind Section 11 requires that the statute be read broadly enough to allow a plaintiff have standing.[123] It remains to be seen both whether this case will be upheld and, if so, whether Section 11 plaintiffs in cases involving SPACs will have standing under the same rationale.

Third, whereas an IPO exposes the underwriter to litigation risk under Section 11, there is no underwriting of shares in a SPAC merger. Consequently, even where shareholders have a valid Section 11 claim against the SPAC and its management, they do not have a claim against an underwriter.[124]

We cannot draw a causal connection between the insulation a SPAC can provide from Section 11 risk and SPAC shareholders' overvaluation of post-

122. 15 U.S.C § 77k(a) (2018).

123. Pirani v. Slack Technologies, Inc., No. 19-cv-05857-SI (N.D. Cal. Apr. 21, 2020).

124. As a financial advisor to the target company or to the SPAC, if an investment bank is heavily involved in marketing the merger, it could potentially risk liability under Section 14(a), which applies to misstatements and omissions in the connection with a merger. An investment bank may also serve as placement agent for the SPAC's PIPE and could potentially face liability under Section 10(b) and Rule 10b-5 under the Securities Exchange Act of 1934. These risks are not as great as liability under Section 11 or 12 of the Securities Act.

merger returns. But painstaking due diligence is one of the practices that has evolved in preparing for an IPO. This is in part motivated by the underwriter's involvement. The underwriting agreement for an IPO typically provides that the lawyer for the issuer and the lawyer for the underwriter will both provide a "negative assurance letter" to the underwriter stating that, based on their own due diligence, they believe the prospectus is not materially misleading or incomplete. Consequently, both the issuer's lawyers and the underwriter's lawyers engage in extensive due diligence. To the extent this due diligence is motivated by underwriters' Section 11 liability risk, and to the extent the due diligence is considered important as applied to IPOs, it would follow that if the regulatory playing field between SPACs and IPOs is to be leveled, the leveling should bring SPAC regulation up to the level of IPO regulation. It could also lead to more complete disclosure of the SPAC costs and the sponsor's interest in the SPAC, which are discussed below.

B. SPAC-Specific Disclosure

The fact that SPAC mergers have resulted in systematically bad deals for nonredeeming SPAC shareholders suggests that regulatory intervention aimed at enhancing disclosure at the time of their merger may be warranted. That disclosure should allow shareholders to understand the extent to which the SPAC's net cash per share falls short of its shares' $10.00 redemption price; it should provide transparency into the price all investors are paying to invest in the post-merger company; and it should reveal the sponsor's interest in the deal. At this point, none of this is readily apparent to SPAC shareholders considering whether to redeem their shares or remain invested in the merger.

1. Net Cash Per Share

A SPAC's pre-merger net cash per share is important for two reasons. First, that cash will become an asset of the combined company and to that extent contribute to its value. Second, a SPAC's net cash per share provides SPAC shareholders with a starting point from which to estimate the value they can expect to receive in a proposed merger. SPAC shareholders can use this information to assess the valuation of the target that has been provided to them. The target's management and shareholders will have done due diligence on the SPAC and will know how much net cash it holds per share.[125] A reasonable expectation is that the target has negotiated a share exchange in which its shareholders will give up a fraction of their company roughly equal to the value of the SPAC shares they will receive, and the primary value of a SPAC is its

125. As we have explained, this will change with redemptions. *See supra* text accompanying notes 39 to 41. Nonetheless, the target can determine a baseline level of net cash per share and make contingent estimates from there. As we propose below, the SPAC could provide this same information to SPAC shareholders.

cash. SPAC shareholders may choose to place additional value becoming a public company or on the SPAC's sponsor's continued engagement with the company after the merger. If they believe the sponsor will add sufficient value to make up for the difference between $10.00 and net cash per share, then they will rationally choose to hold their shares through the merger. But the more net cash the SPAC holds, the less faith its shareholders need to place in the sponsor to justify holding onto their shares.

A SPAC, therefore, should disclose clearly its net cash per share heading into a merger. Its disclosure of pre-merger net cash per share should account for (a) the dilution caused by the sponsor's promote and the SPAC's warrants, (b) the cash outlays in underwriting fees and other fees and (c) discounts offered by the SPAC for PIPE investments.[126] The raw data for calculating net cash per share is often in a SPAC's proxy—indeed, we used that data to provide the analysis above—but providing that raw data is a far cry from providing shareholders with a statement of how much net cash underlies each of their shares. The SEC should prescribe a standardized format in which this information is disclosed. SEC regulations governing proxy statements and prospectuses often require direct, explicit disclosures of centrally important information even where that information could be reconstructed from raw material elsewhere in the document. The rule we propose would be analogous to the requirement that proceeds net of the underwriting discount be disclosed in an IPO prospectus. Moreover, research has shown that providing investors, particularly retail investors, with more transparent information on transaction costs can benefit investors.[127]

Because a SPAC's net cash per share is influenced by redemptions, it will not be possible to disclose the precise amount of net cash the SPAC will ultimately contribute to the combined company, as we could in Part III retrospectively. Nonetheless, SPACs can disclose net cash per share assuming no redemptions, and net cash per share under alternative redemption scenarios—for example, redemptions of 20%, 40%, 60%, 80% and 95%.[128] SPACs proxies already follow this sort of approach in presenting pro forma financial statements. Shareholders can then make their own judgments regarding a likely redemption rate and come to their own estimate of how much net cash the SPAC will contribute.

2. Quality of Signal Conveyed by PIPE Investments

In addition to a SPAC's net cash per share, the price per share paid by PIPE investors is an important indication of whether a proposed merger is a good deal

126. *See supra* Section III.B.

127. Christine Cuny, Omri Even-Tov & Edward M. Watts, *From Implicit to Explicit: The Impact of Disclosure Requirements on Hidden Transaction Costs*, 59 J. ACCT. RES. 215 (2021).

128. For a more ambitious proposal, see Mira Ganor, *The Case for Non-Binary, Contingent, Shareholder Action*, 23 J. BUS. L. 390, 415-416 (2021) (proposing that shareholders be permitted to specify redemption contingent on total redemptions).

for public shareholders. A PIPE investment at $10.00 per share can validate a proposed merger and give a SPAC's public shareholders reason to be comfortable with a merger that treats SPAC shares as worth $10.00, despite the fact that there is far less net cash underlying the shares. But it is common for PIPEs either to be priced at a discount, for PIPE investors to be issued warrants or other sweeteners, or for sponsors to transfer shares or warrants or membership interests in the sponsor itself to PIPE investors to subsidize their investment.[129] All PIPE transactions and associated side payments are material to a public shareholder's decision to redeem or remain invested in a merger. We propose that SPACs compute and disclose the effective price per share paid by PIPE investors, accounting for discounts, side payments made by the sponsor, and additional securities received by the PIPE participants.

SPAC sponsors also negotiate side agreements with investors that currently own, or that commit to acquire, publicly traded SPAC securities prior to a SPAC merger. In these agreements investors commit not to redeem their shares, but the material terms of the agreements, including any compensation investors receive for these commitments, are frequently not disclosed. We propose that SPACs be required to disclose all material terms of non-redemption agreements.

3. Sponsor and Management Interest

As we have shown, sponsors reap very high post-merger returns even when nonredeeming SPAC shareholders experience negative returns. If a merger were to fail, the sponsor would lose its entire investment. The same is true of SPAC officers and directors, who often overlap with the individuals that control the entity that is the SPAC's sponsor. The interests of sponsors and management are thus poorly aligned with those of shareholders. The Division of Corporate Finance has issued a Disclosure Guidance on sponsors' conflicts of interest, which speaks in general terms about disclosure of sponsor interests.[130] We would go farther and require more specific disclosures.

SPACs' proxy statements routinely make qualitative statements about sponsors and SPAC management having conflicting interests with shareholders. They vary, however, in the transparency of the specifics. Some SPACs are opaque with respect to such matters as the sponsor's relationship with affiliates that make PIPE investments,[131] ownership interests in the sponsor, and how the

129. For example, when Pensare Acquisition Corp. merged, PIPE investors purchased units consisting of one debenture of principal amount $1000 and a warrant to purchase 100 shares at an exercise price of $0.01. The debentures were convertible to common stock based on a variable conversion factor set initially at $3.45 per share. *See* Pensare Acquisition Corp., Proxy Statement (Form PRER14A), at 86 (Jan. 23, 2020).

130. Division of Corporation Finance, *Special Purpose Acquisition Companies CF Disclosure Guidance No. 11*, SEC. & EXCHANGE COMM. (Dec. 22, 2020), https://www.sec.gov/corpfin/disclosure-special-purpose-acquisition-companies [https://perma.cc/GAL4-7KAW].

131. For instance, see Churchill Capital Corp. III, Proxy Statement (Form DEFM14A), at 252 (Sept. 18, 2020) (noting a PIPE investment by an entity called "Garden State," and disclosing that the

sponsor divides the promote among different individuals and institutions.[132] SPAC proxy statements should be required to clearly disclose how much the sponsor and SPAC management will gain if a merger closes, and how much they have invested and thus will lose if the SPAC liquidates. In addition, sponsors should be required to disclose the post-merger share price needed to make proceeding with the merger more profitable for the sponsor than a liquidation. For most sponsors, even a merger worth one penny per share would be more attractive than a liquidation in which their entire investment is lost. For sponsors that make a new investment in the SPAC at the time of the merger, this break-even share price required to make the merger more profitable than a liquidation would be higher than one penny.

VII. Postscript: Is This Time Different?

We posted the first draft of this Article online in October 2020, about three months after the end of our sample period. By that time, a bubble in SPAC prices had begun to inflate, the pace of SPAC IPOs and mergers had accelerated, and exuberance about SPACs was approaching a fever pitch. As of November 1, 2021 (16 months after our sample period), 708 SPACs had gone public since June 2020, and 209 SPACs had merged—far outstripping the 93 SPAC IPOs and 46 SPAC mergers over the prior 16 months.

Since we posted our paper, we have received countless responses to our research from participants in the SPAC world, most of which amounted to "your study is out of date—this time is different." As Carmen Reinhart and Kenneth Rogoff have said, "More money has been lost because of these four words than at the point of a gun."[133]

In this postscript to our research, we address this response. As we explain, there are in fact differences between the SPACs in our 2019-20 Merger Cohort and SPACs that have merged since June of 2020. But much has remained the same—most importantly, SPACs' dilutive structure, their dissipation of cash, and the weak incentives of sponsors and SPAC management. Moreover, as of November 2021, the air has come out of the SPAC bubble, and some of the positive changes have reversed themselves. It remains to be seen whether the remaining differences will continue. Even if they do, however, the logical connection between SPACs' structural flaws and their poor post-merger performance suggests that, on average, SPACs will continue to be a bad

individual that controlled the sponsor, Michael Klein, had an ownership interest in Garden State but not disclosing the amount of that ownership).

132. In one striking example, a prominent SPAC sponsor, Michael Klein, stated that he had shared his promote with other parties, including PIPE investors, in ways not disclosed to investors at the time of the SPAC merger, and that he was under no obligation to make such information public. Amrith Ramkumar, *SPAC Insiders Can Make Millions Even When the Company They Take Public Struggles*, WALL ST. J. (Apr. 25, 2021), https://www.wsj.com/articles/spac-insiders-can-make-millions-even-when-the-company-they-take-public-struggles-11619343000 [https://perma.cc/PG35-GVP4].

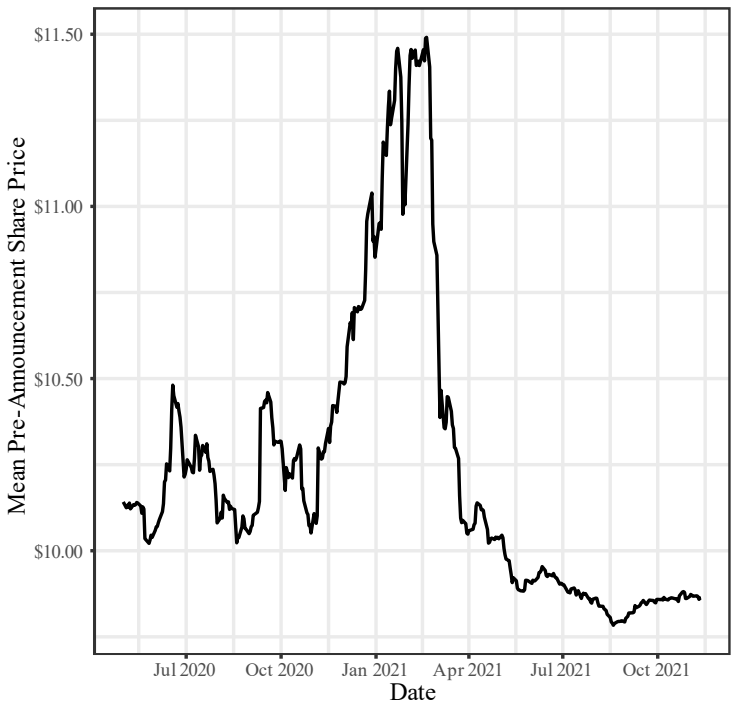
133. *E.g.*, CARMEN M. REINHART AND KENNETH ROGOFF, THIS TIME IS DIFFERENT: EIGHT CENTURIES OF FINANCIAL FOLLY 394 n.10 (2009).

investment for nonredeeming shareholders. As we show in Section 6, below, so far this expectation has been borne out.

A. The SPAC Bubble

Figure 13 shows the share prices of SPACs between the day of their IPO until the day before they announced a merger from January 2020 to November of 2021—that is, SPACs searching for a target. Beginning in October of 2020, prices surged to a peak of about $11.50 in February of 2021, and then back down to $10.00 in mid-2021. We have shown that the roughly $10.00 share price at which SPACs have historically traded before announcing a merger is highly inflated relative to the amount of net cash a SPAC has to invest in a merger. Pre-merger shares typically trade at roughly $10.00 because they can be redeemed for about $10.00 when a merger is proposed. For SPAC shares to trade at an average price above $10.00 means either that shareholders believe that SPACs will routinely negotiate deals with targets that will result in post-merger share prices above $10.00, or that shareholders are relying on the "theory of the greater fool" associated with investment bubbles.

Figure 13: The SPAC Bubble



The reaction of SPAC share prices to merger announcements was even more dramatic. The mean and median share prices the day after an announcement were $15.77 and $14.76, respectively, during Q4 2020 and Q1 2021. Again, shareholders were either highly optimistic that post-merger SPACs, for the first time ever, would be good investments across the board, or they believed that the next guy would believe the hype even more than they did. We will treat Q4 2020 and Q1 2021 as the period in which the SPAC market was well into its bubble.

By the second quarter of 2021, SPAC share prices came back roughly to where they were before the bubble, with mean pre-merger share prices approximately at $10.00. Furthermore, those SPACs that merged in Q4 2020 and Q1 2021 and appeared to be great deals for investors have now soured. As of December 2021, the mean and median prices for those SPACs have fallen to $9.01 and $7.09, respectively. If investors had redeemed their shares and invested the proceeds in a market index, they would now have roughly $12.35 in value. And, of course, if they had sold their shares at their inflated prices during the bubble, they would have done even better.

B. What Is Not Different?

The structural elements of SPACs that are the source of their dilution and incentive misalignment remain essentially unchanged. Indeed, as we have said above, the structure of SPACs has been surprisingly static, not only since 2020, but since 2009, when SPACs reemerged from the financial crisis in their current form. The sponsor's promote, the warrants and rights, the underwriting fee, and the other fees are all still present in essentially the same form as in our 2019-20 Merger Cohort. As we discuss below, there have been some changes. But for those changes to turn SPACs from a losing proposition into a winning proposition for shareholders, they must be substantial enough to make up for the value extracted by these structural features—and they must persist in the post-bubble period.

C. What Is Different?

As is often true in times of a financial bubbles, the SPAC bubble led commentators and SPAC promoters to exclaim that "this time is different." What we repeatedly heard was that SPACs may have been a bad investment for shareholders in the past (and as recently as three months before we posted the first draft of this Article), but no longer.[134]

134. For instance, a March 31, 2021 newsletter from SPAC Insider, a leading SPAC industry website, asserted: "It's become quite common for the financial media to quote statistics saying something to the effect that the past performance of de-SPAC'd companies is historically not great and they then want to apply an outdated metric to the current vintage of SPACs that is very much an apples and oranges comparison." In reference to our data set, the newsletter argued that this Article "does not capture the current market boom that started in roughly June of 2020." *Union Acquisition Corp. II (LATN) to Combine*

So, are there any differences between SPACs in our 2019-20 Merger Cohort and those that have merged since June 2020—differences, that is, that may have enhanced the value provided to nonredeeming shareholders? During the period of the bubble there were four such differences: lower redemptions, fewer warrants, larger PIPEs, and reportedly more high-quality sponsors. In addition, there was one structural element that has been described as a new innovation but that has actually been around for at least a decade and that, as we have explained, has a minimal impact on value: sponsor earnouts. We discuss each of these differences below, and we evaluate whether they are likely to improve returns to shareholders and likely to last now that the bubble has deflated. Finally, we look at returns to mergers that closed during and since the bubble, and we find that, so far, SPACs on average continue to be a losing proposition for nonredeeming shareholders.

1. Redemptions

Redemptions were very low during the SPAC bubble. From Q4 2020 to Q1 2021, mean and median redemptions were 22% and 0%, respectively (compared to 58% and 73% during our sample period). Lower redemptions meant lower dilution and more net cash per share delivered in a merger. Based on our analysis, this suggests that post-merger returns to SPAC shareholders will be higher for mergers during the bubble, all other factors equal, than they have been for our Cohort. If target companies expect redemptions to be lower—a reasonable expectation during the bubble—then they will expect to receive more net cash per share, and they will agree to mergers that give SPAC investors more value per SPAC share.

Low redemptions, however, were a direct result of inflated pre-merger share prices during the bubble. If a SPAC's share price prior to a merger is higher than the redemption price, then shareholders that choose to exit will do so via a sale rather than a redemption. Hence, even if share prices are divorced from true value, those inflated prices can impact the real amount of net cash underlying a SPAC share. Low redemptions, however, lasted only as long as inflated prices. The deflation of the SPAC bubble meant a return to redemption levels roughly similar to those experienced by our 2019-20 Merger Cohort. Between July 1, 2021, and December 1, 2021, mean and median SPAC redemptions have been

with Procaps in $1.1Bn Deal, SPAC INSIDER NEWSLETTER. (Mar. 31, 2021), https://spacinsider.com/2021/03/31/union-acquisition-corp-ii-to-combine-with-procaps-in-1-1bn-deal [https://perma.cc/8L86-4U3U]. A representative article from Barrons discussing a SPAC's acquisition of Nikola notes that "[f]rom the perspective of those companies, the lower dilution and better alignment of incentives unfolding in higher-quality corners of the SPAC market is creating an increasingly attractive alternative to the traditional IPO . . . . the growing universe of companies willing to consider the SPAC route to public markets is accelerating the virtuous cycle under way in the maturing SPAC industry. With better companies as potential targets, better sponsors will raise SPACs, who can attract even better companies with better terms." Jasinski, *supra* note 4. As it turned out, Nikola was not part of a "virtuous cycle." *See* Corinne Ramey, *Nikola Founder Trevor Milton Charged With Securities Fraud*, WALL ST. J. (July 29, 2021), https://www.wsj.com/articles/nikola-founder-trevor-milton-charged-with-lying-to-investors-11627563648 [https://perma.cc/72WS-ZYRA].

55% and 66%, respectively. Redemptions at roughly this level are the historical norm for SPACs.[135] Those during the bubble were a temporary aberration.

2. Warrants Per Unit

During the SPAC bubble, the number of warrants included in SPAC units declined on average. During our study period from January 2019 to June 2020, the mean number of warrants for new SPAC IPOs was 0.5 per unit.[136] During the peak of the bubble, in Q4 2020 and Q1 2021, that number declined to 0.33. IPO investors presumably expected each warrant (and shares) to be worth more during this period, and therefore were willing to accept fewer warrants. As the bubble deflated, however, the number of warrants in SPAC units reflated. SPAC IPOs from July through November of 2021 returned to an average of 0.5 warrants per unit. The SPAC IPO market thus remains dependent on free warrants in exchange for setting SPACs up as public companies.[137]

3. PIPEs

The use of PIPEs increased during the SPAC bubble, as did the size of PIPEs. During our study period, from January 2019 to June 2020, the average PIPE equaled 30% of the money a SPAC raised in its IPO. In the bubble period from Q4 2020 to Q1 2021, by contrast, the average PIPE had grown to 85% the value raised in the SPAC IPO.[138] This is an important difference. So long as PIPE investors pay a price per share that is greater than a SPAC's net cash per share, they increase net cash per share at the time of a merger, and the larger the PIPE the greater the increase. PIPEs can thus lead to higher returns to SPAC shareholders. Nonetheless, unless a PIPE is extraordinarily large, a SPAC will still deliver substantially less than $10.00 per share in net cash to a post-merger company.

The PIPE market has significantly cooled since the bubble deflated, with SPAC mergers completed in September through November 2021 having average PIPEs equal to 75% of money raised in SPAC IPOs, and those announced from September through November 2021 having PIPEs equal to 43% of money raised in IPOs. That is still more PIPE money than was invested during our study period, but it remains to be seen whether the supply of PIPE funds will persist.

135. For instance, mean redemptions for 2017, 2018, and 2019 were 51%, 54%, and 65% respectively. Median redemptions for 2017, 2018, and 2019 were 58%, 74%, and 80% respectively.

136. In this and other calculations here, we treat a right for 1/10 of a share as equivalent to a warrant for 2/3 of a share. This is based on the fact that a warrant for 1/10 of a share will be worth roughly $1.00, based on a $10.00 pre-merger SPAC share price, and a warrant is worth roughly $1.50 per share, based on the typical trading prices for warrants following SPAC IPOs.

137. Most of the SPACs that went public during the bubble were not among those that merged during the bubble, so to the extent fewer warrants enhance shareholder value, that value will appear in later mergers.

138. These figures include PIPE investments made under a Forward Purchase Agreement, or FPA. For the purpose of computing average PIPE size, we treat SPACs with no PIPEs as having PIPE equal to 0% of IPO proceeds.

Unless this time is different with respect to long-term returns, those investments on average will be losing propositions.

4. Net Cash Per Share

We now use these data to approximate net cash per share for SPACs that have merged since our sample period of January 2019 through June of 2020. Table 9 summarizes redemptions and PIPEs in the first two columns. The third column contains our estimates of net cash per share based on those figures and on estimates of fees paid in connection with mergers and sponsors' cancelation of shares in their promote.[139] Average pre-merger net cash per share increased to $6.60 during the bubble period, driven primarily by increased PIPE sizes, fewer warrants, and reduced redemptions. But in post-bubble mergers, net cash per share has declined. Mergers that closed between September and November 2021, some of which were negotiated during the bubble, had mean net cash per share of $6.40, significantly higher than the mean for the 2019-20 Merger Cohort. In mergers that were announced, but not closed, between September and November 2021, net cash per share was $5.40. Net cash per share in each of these periods was higher than that of our 2019-20 Merger Cohort, but still substantially less than the $10 per share that shareholders forego in choosing not to redeem their shares.

Table 9: Mean SPAC Dilution – Post-Study-Period Changes

Period	PIPE as % IPO	Redemption %	Net Cash per Share
2019-20 Merger Cohort	30%	58%	$4.10
2020 Q4 - 2021 Q1 (Bubble)	85%	22%	$6.60
2021 Sept. - Nov. Mergers	75%	59%	$6.40
2021 Sept. - Nov. Announcements	43%	59%*	$5.40

*Based on an assumption that mean redemptions for Sept. - Nov. 2021 announced mergers will equal mean redemptions for Sept. - Nov. 2021 completed mergers.

139. In addition to PIPEs and redemptions, we collected data for these periods on public and sponsor warrants and cancellations of sponsor shares and warrants. For non-underwriting fees paid in connection with mergers and for promotes net of forfeitures at the time of a merger, we assumed the percentages from our sample period would continue into these periods. We treat warrants as being worth $1.50 each, which is roughly what they were worth prior to SPAC mergers in our sample before a merger was announced. During the bubble, warrants were worth much more than this pre-merger, frequently $4, $5, or more. If we valued those warrants at their full price, net cash per share during the bubble would be much lower. In part, our choice to use historical warrant valuations is to be conservative. It also reflects our skepticism that inflated warrant prices reflected the true value of those securities, much as we are skeptical that post-pop IPO prices reflect the true value of securities sold in traditional IPOs.

5. Sponsor Quality

Commentators have stated that more SPACs today are sponsored by high quality sponsors than was true in the past.[140] We found in Section III.A that SPACs with high-quality sponsors experienced lower redemptions, attracted larger PIPEs, and had post-merger returns far higher than other SPACs.[141] Factors contributing to these higher returns were higher PIPEs, lower redemptions, and less dilution, but high-quality sponsors may have contributed more as well. If high-quality sponsors, in fact, account for a larger fraction of SPACs than they did among our 2019-20 Merger Cohort—a claim we have not investigated—then mean and median returns to SPAC shareholders could well be higher on average than they have been those for our Cohort. Our findings on returns to SPACs with high-quality sponsors, however, do not suggest that those SPACs are good investments—only that they are better than investments in SPACs with non-high-quality sponsors. On a market-adjusted basis, even high-quality sponsors performed poorly on average.

6. Sponsor Compensation and Earnouts

Finally, commentators have touted sponsor "earnouts" as a new innovation that aligns sponsor and shareholder incentives and forces sponsors to share the losses of public shareholders if a SPAC performs poorly. Earnouts, which typically apply to about 30-40% of the shares in a sponsor's promote, prevent a sponsor from taking those shares unless the SPAC's post-merger share price hits specified thresholders—commonly $12.50 and $15.00—within five or more years. In a separate article, we show first that these earnouts are not new, and second, that they have essentially no impact on sponsors' incentives, on the sponsors' expected returns, or on net cash per share.[142] The central reason for this is that shares subject to an earnout are an option-like derivative security, whose value depends primarily on the volatility of the underlying shares and the earnout's duration. Because post-merger SPAC share prices are highly volatile, and earnouts have durations of five years or more, an earnout does little to reduce the value of the sponsors' ex ante interest in a merger or to deter the sponsor from proposing a merger that is a losing deal for SPAC shareholders.

140. For instance, a recent Barron's article argues that "[t]he current generation of SPACs includes better-quality companies, better management teams associated with them, and also better sponsorship—which all creates a virtuous cycle and attracts a different kind of investor in your SPACs," Nicholas Jasinski, *'Blank-Check' Companies Are Hot on Wall Street. Investors Can't Ignore Them*, BARRON'S (Jan. 17, 2020), https://www.barrons.com/articles/boom-in-blank-check-companies-or-spacs-what-investors-need-to-know-51579299261 [https://perma.cc/DF4V-CC9F].

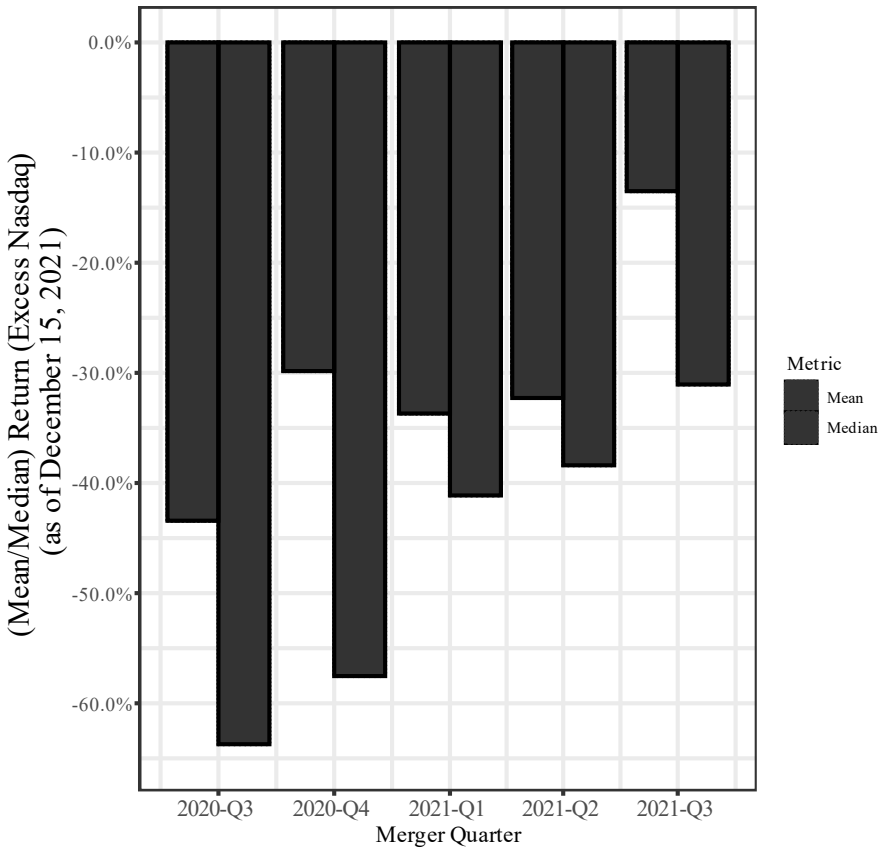
141. We define high-quality sponsors as those affiliated with funds that have more than $1 billion under management and individuals that had been top executives of Fortune 500 companies. Commentators presumably have a more subjective sense of high-quality sponsors, but there is probably a substantial overlap. See *supra* Section II.D.

142. Klausner & Ohlrogge, *supra* note 30.

7. Returns to Mergers Since Our Study Period

Figure 14 shows quarterly post-merger market-adjusted returns since our study period—including the period of the bubble and the period since the bubble. We measure returns as of December 15, 2021. To avoid stacking the deck against the mergers at inflated prices during the bubble, we measure returns relative to the roughly $10 redemption prices of all SPACs, rather than relative to the trading prices on the days the mergers closed. Even with this adjustment, the returns to mergers that occurred during the bubble are quite poor, as are returns for more recent mergers. It appears as though returns have gotten less bad over this period but, as we saw in Figure 9, SPACs' post-merger returns tend to fall further over two years. So, it remains to be seen whether this apparent improvement persists, and more generally, whether the past year's returns get worse, or perhaps turn around.

Figure 14: Post-Merger Returns (Excess Nasdaq) for SPACs After our Study Period



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In sum, the core problematic features of SPACs remain. Some positive developments that emerged during the SPAC bubble have already reversed themselves since the bubble deflated, but other differences between SPACs merging today and the SPACs we analyzed in our 2019-20 Merger Cohort continue, at least for now. PIPEs are larger, and dilution is therefore less severe. In addition, there may be more high-quality sponsors. Our analysis implies that these SPACs will perform somewhat better than the SPACs in our Cohort, on average. But net cash per share in SPACs today, and even during the bubble, is still far below the $10.00 per share that shareholders forgo by not redeeming their shares, and sponsors' incentives are no different from the incentives of sponsors in our Cohort. Our analysis, therefore, still suggests that these will not be good investments on average, and the returns so far are consistent with that expectation. In short, this time has not been different.

Conclusion

SPACs, as presently structured, are a poorly designed vehicle by which to bring a company public. In establishing a SPAC as a public company, the sponsor and the IPO investors take compensation in the form of securities that dilute the value of SPAC shares. In addition, the underwriter takes its fee, generally based on the shares issued in the SPAC's IPO regardless of whether the shares it sells are later redeemed, and additional advisors at the time of the SPAC's merger extract more fees. Based on data collected from SPACs that merged between January 2019 and June 2020, we have found that the median SPAC share purportedly worth $10.00 has $5.70 in net cash per share, and that the mean net cash per share is only $4.10, at the time of a SPAC's merger. Net cash per share in more recent SPACs is somewhat greater, but far below $10. We further found that, on average, post-merger companies' share prices decline in proportion to pre-merger net cash, which means that targets tend to negotiate merger terms that leave nonredeeming SPAC shareholders bearing much of the cost embedded in SPACs.

We find that the costs associated with SPACs as currently structured are far higher than the costs of an IPO, even taking into account the IPO "pop." Because SPAC shareholders bear those costs, however, a SPAC can be a cheaper means of going public than an IPO from the perspective of a target. So long as the target negotiates merger terms that leave the nonredeeming SPAC shareholders bearing the cost of the merger, the SPAC is a good deal *for them*. The current situation in which SPAC shareholders in effect subsidize targets going public, however, is not sustainable.

Our findings do not imply that the basic concept of a SPAC is bad. It is not difficult to imagine a more shareholder-friendly SPAC. First, such a SPAC would issue no warrants or rights in its IPO. Warrants and rights are issued for free to IPO investors so that they will buy shares and prop the SPAC up as a

public company until the SPAC proposes a merger, prior to which point the IPO investors exit. A more shareholder-friendly SPAC would rely on the skills of its sponsor to attract investors in its IPO. Second, sponsor compensation in a shareholder-friendly SPAC would be lower, adjusted for redemptions, and structured to better align sponsor incentives with shareholder interests. Third, the SPAC's underwriter would be paid on the basis of nonredeemed shares. Finally, there would be a large PIPE that would both validate the SPAC's merger and reduce dilution. Alternatively, to the extent elements of the SPAC structure are beneficial for taking a company public—such as the involvement of a sponsor or the validation provided by a PIPE investor—those elements could be incorporated into IPOs or direct listings without the costs embedded in SPACs.

Although investors that hold shares in SPACs at the time of a merger arguably have only themselves to blame for making losing investments, SEC regulations that govern SPACs may be a contributing factor. First, SPAC mergers enjoy more lenient regulatory treatment than IPOs in certain respects. Although SEC staff have raised doubts about this proposition, SPAC mergers are widely understood to be covered by the PSLRA's safe harbor for projections and other forward-looking statements. In addition, SPACs' underwriters are largely insulated from liability for misstatements and omissions. This leniency may lead SPACs, their sponsors, and their targets to paint too rosy a picture of the combined company's future. We propose that the playing field be leveled so that there is no regulatory preference potentially channeling firms toward SPACs rather than IPOs.

Second, the costs embedded in SPACs and sponsors' interests are not disclosed as clearly as they should be. We propose that the SEC require SPACs to provide more complete and clearer disclosure. With a level regulatory playing field, and better disclosures of SPAC costs and sponsor interests, we expect that the market will be better equipped to judge the extent to which SPACs are a valuable vehicle for taking companies public. We also expect that with better disclosure, there will be greater market pressure on SPACs to improve their terms to compete on a level playing field.

Appendix – Alternative Perspectives on SPAC Costs

In the body of this Article, our approach to SPAC costs is to view the target shareholders and the nonredeeming SPAC shareholders as principals in the SPAC transaction, and to view any value delivered to parties other than these principals (the SPAC sponsor, IPO investors, underwriters, other service providers) as costs. We first measure the total value of these costs and then infer which parties bear the costs based on a statistical analysis of the relationship between the amount of net cash remaining in the SPAC and the value of the shares that non-redeeming SPAC shareholders receive in the merger. We find that, on average, SPAC shareholders bear the costs inherent in the SPAC structure. For instance, if one SPAC has $5.00 net cash per share prior to its merger and another SPAC has $6.00 in net cash, the share price of the latter SPAC will tend be $1.00 higher than that of the former SPAC. We also find, however, that SPAC mergers may on average yield surplus value—perhaps reflecting the value of the target becoming a public company or perhaps value added by the continuing engagement of the SPAC's sponsor. Some of this value, we find, is reaped by the SPAC shareholders.

In this Appendix, we take a different approach to investigating the incidence of SPAC costs. Here we analyze what targets give and what they get, on average, in SPAC mergers. This approach follows "issuer-oriented" methods for measuring the costs of IPOs and IPO underpricing, as articulated, for instance, by Christopher Barry,[143] and as applied to SPACs more recently by Gahng, Ritter, and Zhang.[144] We treat the target as going out into the public market to sell securities, as in an IPO. In a perfectly efficient capital market, investors compete with each other to purchase public securities and will be willing to pay up to an amount equal to the value of those securities. The result will be that the value of any surplus created by going public will be captured by the owners of the company going public. If we also stipulate that this market has no transaction costs or other frictions, then the value of all securities the target gives up to new investors will equal the total value of net cash the target receives. In an IPO, this calculation is simple—the new owners are the investors that purchase common shares in the offering. For a SPAC, the new owners are the non-redeeming common shareholders, SPAC sponsors, PIPE investors, and warrant holders.[145] We therefore compare the total post-merger value of

143. Christopher B. Barry, *Initial Public Offering Underpricing: The Issuer's View—A Comment*, 44 J. FIN. 1099 (1989).

144. Gahng, Ritter & Zhang, *supra* note 8.

145. We include the value of all sponsor promote shares, all warrants or other securities purchased by the sponsor in a private placement concurrent with the SPAC's IPO, the value of all public warrants and rights given to IPO-stage SPAC investors, the value of all shares received by non-redeeming public SPAC investors, the value of all shares and warrants issued to PIPE investors, and the value of all securities given to underwriters or financial advisors in compensation for their services associated with SPAC deal. We account for any cancellation of sponsor shares or warrants and reduce the value of the sponsor's shares to account for any earnouts, using the procedures we outline in Klausner & Ohlrogge,

securities that *all* of these new investors receive with the net cash the SPAC delivers.[146] The more that the total value of post-merger securities differs from the net cash the SPAC delivers, the greater the costs that the targets bears, from this perspective. Note, however, that in contrast to the body of this Article, cost from this perspective includes the value of any surplus that the target fails to capture.

Because this approach only focuses on the difference between what the target gives and what it gets, it ignores the allocation of value among the SPAC's various securities holders and, in particular, whether SPAC shareholders bear losses that correspond closely to the value extracted by parties such as the SPAC sponsors and warrant holders. To illustrate this "target-centric" perspective on SPAC costs, consider a SPAC that has sold 80 public shares for $10.00 each and given 20 shares to its sponsor as a promote, so the SPAC has $8.00 of cash prior to its merger. Assume the SPAC merges with a target whose shares are worth $8.00 each, and that there is no surplus created by the merger. If the SPAC shareholders accept a deal that leaves them with shares worth $8.00, then the target will have given up shares for $8.00 each and received shares in the post-merger company worth $8.00. They will have gotten what they gave. So long as the SPAC sponsor succeeds at inducing SPAC shareholders to accept losses at least as large as the sponsor's promote, then the promote is not a cost from the target's perspective. That is, from a target-centric perspective, the costs are zero in this example. In contrast, from the SPAC shareholders' perspective, the $2.00 per share taken by the sponsor is a cost.

Specifically, we define:

$$\text{Target Cost} \coloneqq (\text{Value of All Securities Received by SPAC Affiliated Parties}) - (\text{Cash SPAC Delivers, Net of Fees})$$[147]

The "Target Cost" as defined above is in dollar terms. In order to make this cost comparable across SPACs and targets of different sizes, we must express this cost in terms of a common denominator. We thus divide these dollar figures

2021, *supra* note 30. The calculations in this appendix are similar to our calculation of SPACs' social costs.

146. We compute the cash the SPAC delivers by multiplying the number of non-redeemed shares times the redemption price, adding to that total proceeds from any PIPE offerings, and subtracting from that any deferred underwriting fees, and any other cash transaction fees incurred by the SPAC or target company. Because the initial underwriting fees are paid for from proceeds of the SPAC sponsor's private placement at the time of the SPAC's IPO, we do not deduct the initial underwriting fees. We presume that the proceeds from the SPAC's IPO-stage private placement are equal to the costs of the initial underwriting fee plus any other pre-merger SPAC expenses.

147. If a SPAC has $800 in cash, but pays cash fees of $50, then cash delivered net of fees would be $750 in this calculation. If fees are increased, and all else stays constant, then fees increase target costs. As with the sponsor promote, however, if SPAC investors willingly accept losses that cover the fees, then the Target Cost for the transaction will be zero.

for each company by its post-merger market capitalization.[148] Table 10 presents the results of these calculations. The first column of the table measures security values as of one week following the SPAC merger's closing.[149] It shows mean and median Target Costs of 15.4% and 16.3% of post-merger target market capitalization. Viewed in this way, SPACs would seem to be very expensive for target companies. By comparison, Gahng, Ritter, and Zhang estimate that the cost of the median IPO during our sample period was only 4.8% of post-IPO market capitalization.[150]

Nevertheless, there are two reasons why inferences about actual target costs based on immediate post-merger prices may be misleading. First, as we show in Figures 7 and 9, market-adjusted SPAC shares consistently and significantly drop in value after a merger. If prices really were perfectly efficient the day mergers close, then this consistent post-merger price drop could only be explained by an extraordinary and prolonged string of bad luck. Under our interpretation, by contrast, target companies may have been willing to accept the terms of SPAC mergers because they viewed those terms as reflecting the true value of their businesses—even if it took the market time to come to that realization. Second, as we explain in Part IV above, the case that SPACs deliver uniquely valuable transactional or regulatory benefits is ambiguous at best. We thus question how plausible it is that owners of target companies would willingly absorb costs three times those of traditional IPOs in exchange for these relatively modest SPAC benefits that could mostly be captured in the setting of a traditional IPO.

To investigate this further, we recalculate Target Costs using the market-adjusted value of SPAC shares one year, rather than on week following SPAC mergers. As shown in the second and third columns of Table 10, Target Costs shrink to a mere 3.5% of post-merger market capitalization—notably less than the cost of IPOs—after one year when adjusting for growth in the Nasdaq. Target Costs are negative 2.7% when adjusted for growth of the IPO index. That is, for the average SPAC, as of one year following a merger, the value of the securities the target granted to all SPAC-affiliated parties was less than the value of the cash the target received, when adjusting the value of that cash for the growth of the IPO index.

The results of these calculations are broadly consistent with the findings from the regression analyses in Part III. Our regression using share prices one-week post-merger showed a large intercept, meaning that SPACs' public shareholders receive shares that on average were worth more than the net cash a

148. We measure the post-merger market capitalization of the combined company as the market value of all of its outstanding shares and warrants, plus the estimated value of earnout shares yet to be granted to either SPAC sponsors or target owners.

149. For an explanation of why we measure security values one week after the merge, rather than the day after the merger, see *supra* note 53.

150. In the original version of Gahng, Ritter & Zhang, the authors provided this figure specifically for the sample period that we studied. More recent versions of Gahng, Ritter & Zhang, *supra* note 8, now present IPO costs over a wider period of time.

SPAC invested in a merger. That finding is the SPAC shareholders' perspective on the target-centric finding here that target shareholders appear to lose a lot of value as of a week after the merger. The regression in Part III that uses more recent share prices as the dependent variable, however, shows an intercept that is statistically no different from zero.[151] As we said there, the apparent gains to SPAC shareholders dissipate over roughly one year, with the remaining value roughly equal to the net cash a SPAC contributes to a merger. This finding matches the target-centric cost calculation here, which shows that target companies have born little, if any, cost when valuing securities at least a year following their merger.

Table 10: Alternative, "Target-Centric" SPAC Costs

	1-Week Post-Merger	**1-Year Post-Merger, Nasdaq Adjusted**	**1-Year Post-Merger, IPO-Index Adjusted**
Mean	15.4%	3.5%	-2.7%
Median	16.3%	10.5%	5.5%

151. There is a slight discrepancy in this comparison, since Table 10 presents results measured as of one-year post-merger, whereas the regressions in Part III use prices from November 1, 2021, which is more than a year after the SPAC mergers. A practical limitation of extending these calculations in the Appendix further periods of time after the merger is that the post-merger market cap of some of the target companies has fallen to close to zero in many of the instances. Because post-merger market cap is in the denominator for the calculations in Table 10, a relatively modest negative SPAC cost (e.g., the extent by which a SPAC delivers more cash to a target than the total value of securities the target gives to all SPAC-affiliated investors) can lead to a very large negative fraction when divided by a close-to-zero post-merger market cap. These results create difficulties when computing mean costs, as are reported in Table 10.