

**Special Purpose Acquisition Companies**  
**(Title suggestions welcome)**

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Abstract

A Special Purpose Acquisition Company (“SPAC”) is a publicly listed firm with a two-year lifespan within which to find a private company with which to merge and thereby bring public. In 2019, SPACs comprised 28% of IPOs and 16% of cash raised in IPOs, and in the first half of 2020 close to 40% of cash raised. We analyze the terms of SPACs and conclude that they create high transaction costs, misaligned incentives, and a Rube Goldberg process by which companies are taken public. Consistent with that analysis, we find that while some high-visibility funds and CEOs have led SPACs to substantial success, SPAC performance in general has been poor. We attribute the persistence of SPACs at least in part to the insulation they provide from liability risk compared to traditional IPOs. To the extent liability risk is not the source of SPACs’ attraction, we propose an alternative “sponsored IPO,” which we believe would achieve the transactional benefits of a SPAC without the costs.

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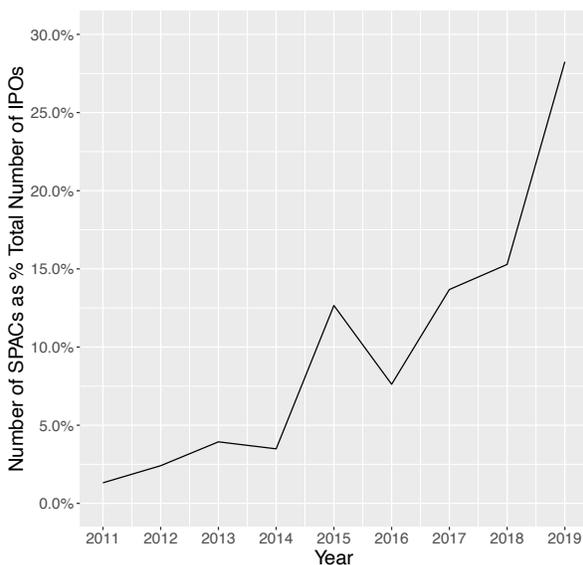
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## Introduction

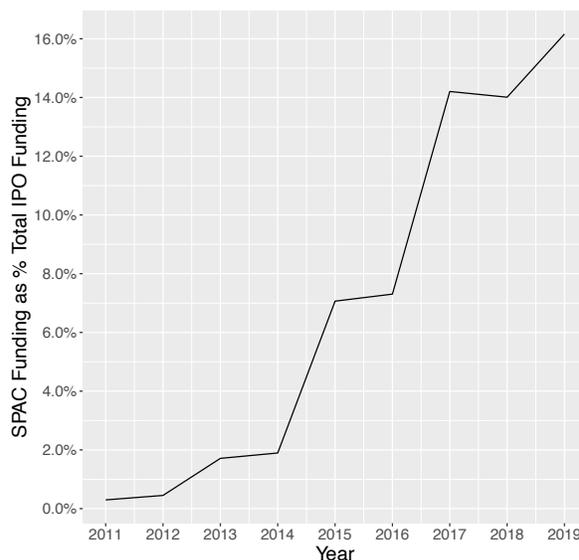
Special Purpose Acquisition Companies (SPACs) are financial vehicles that provide private companies with a “backdoor”<sup>1</sup> means of going public. They are publicly held shell companies that have a two-year period of existence during which their management searches for a private company with which to merge and thereby bring public. As shown in Figure 1, in 2018, SPACs constituted 15% of IPOs and 14% of the capital raised in IPOs; in 2019, they grew to 28% of IPOs and 16% of capital; and in the first six months of 2020, they comprised roughly 40% of capital raised.<sup>2</sup> The current wave of SPACs, which began in 2011 has been referred to as the “third generation” in that it follows two earlier waves, one in the 1990s, and the second in the mid-2000s, each of which died out.<sup>3</sup>

*Figure 1: Growth of SPACs*

(a) Number of SPACs as % Total US IPOs



(b) SPAC Funding As % Total US IPO Funding



<sup>1</sup> E.g. Jacob Rund and Andrea Vittorio, “Blank Check” Companies See Revival as Big names Embrace Trend, Bloomberg Law, July 24, 2019; Alexander Osipovich, Blank-Check Boom Gets Boost From Coronavirus, Wall Street Journal, July 13, 2020, <https://www.wsj.com/articles/blank-check-boom-gets-boost-from-coronavirus-11594632601>.

<sup>2</sup> Data from SDC Platinum New Issues File. In counting US IPOs, we ignore very small ones that raised less than \$40 million, which is the lowest amount raised by the SPACs we study. 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 US IPO funding.

<sup>3</sup> Usha Rodrigues & Mike Stegemoller, *Exit, Voice and Reputation: The Evolution of SPACs*, 37 Del. J. Corp. L. 849, 875- (2013);

Lawyers and economists have described SPACs as a valuable financial innovation that provides benefits to both public market investors and private companies seeking to go public. For investors, SPACs have been referred to as “poor man’s” and “democratized” private equity, to reflect the fact that ordinary, retail investors can buy shares in SPACs whereas they cannot invest in private equity funds.<sup>4</sup> SPACs are understood to take public companies that would have trouble going public through a traditional IPO. These are companies that have few comparable companies on which to base valuation models, companies with uncertain businesses, companies with a complex tax situation—in general, companies for which information asymmetry is such that pricing through the IPO roadshow and book building process will be difficult. For these companies, SPACs are seen as an attractive way to go public “on the cheap.”<sup>5</sup> Douglas Ellenoff, a lawyer who specializes in SPACs has recently been quoted as saying that, with the changes made in third-generation SPACs, “everyone has made money now, the sponsors, investors and targets. . . . Momentum continues to build.”<sup>6</sup>

We analyze the terms and capital structure of third-generation SPACs, the returns to SPAC shareholders, and the composition of SPAC shareholders and find that none of these descriptions is correct. We find that SPACs create high transaction costs for the merger they are designed to accomplish, and that these costs make it unlikely that everyone will make money. Most of the transaction costs associated with SPACs are not paid in cash. They are paid in shares and other securities as compensation to parties needed to create and maintain the SPAC structure for the two years between a SPAC’s IPO and its merger. As we explain, the size of the costs is not readily apparent, nor is it apparent which party bears those costs. Unless a SPAC’s merger will generate economic surplus at least as large as the cost overhanging the transaction, either the target company going public or the SPAC shareholders will lose money on the deal.

We further find that sponsor incentives are misaligned with shareholder interests. Although sponsors prefer a good deal to a bad deal, their payoff structure nonetheless rewards them handsomely for a wide range of bad deals.

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<sup>4</sup> Rodrigues and Stegemoller 2013

<sup>5</sup> Rodrigues and Stegemoller 2013. See also Riemer 2007, Davidoff 2008, Sjostrom 2008.

<sup>6</sup> Jacob Rund & Andrea Vittorio, ‘Blank Check’ Companies See Revival as Big Names Embrace Trend, Bloomberg Law, July 23, 2019, p. 4.

While we cannot prove a causal connection between the cost overhang and misaligned incentives that SPACs create, we find that SPACs' post-merger returns are indeed poor. This suggests that at least in many instances the costs overhanging the merger are ultimately borne by SPAC investors—that is, that SPACs frequently overpay for target shares—which is consistent with the misaligned incentives that we find between sponsor incentives and shareholder interests. In any given instance, however, it is impossible to say how the overhang cost is borne between the target and SPAC shareholders.

With respect to “poor man’s” or “democratized” private equity, we find that SPAC shareholders are overwhelmingly large funds, not retail investors. “Poor man” and “democratized” are thus not accurate descriptions. Nor is “private equity.” Outward appearances notwithstanding, investment patterns in SPACs are not analogous to private equity investments. As some SPAC sector insiders know, nearly all pre-merger shareholders do not continue to hold shares through the time the SPAC invests in a merger, as a private equity investor does. These investors, many of which are known collectively as the “SPAC Mafia,” either exercise a right to redeem their shares or sell their shares on the market when the merger occurs. New shareholders enter at the time of the merger, either through privately placed investments or by buying shares on the market. Thus, SPAC mergers are simply IPOs by another name and another structure, and the SPAC IPO serves solely to create a public vehicle in which investors can later buy shares once a company has been selected to bring public.

Our analysis raises the question why SPACs persist despite their clear structural drawbacks. One factor may be that, through no deliberate design, the securities laws favor SPACs over IPOs. By having companies go public through the merger process rather than the public offering process, the going-public transaction is governed by the securities law regime that governs mergers rather than the one that governs IPOs. One important consequence of this is that SPACs and the companies they bring public can provide projections and other forward-looking information to the market. The rules governing IPOs are less permissive and as a result, companies going public in an IPO rarely provide this sort of information. In addition, the securities laws governing misstatements in an IPO expose underwriters to liability risk for misstatements and omissions. The result is that underwriters are cautious about which companies they are willing to take public, and may extend the diligence process even for those they do bring

public. Underwriters' caution about which companies they will bring public creates the demand for SPACs, which do not impose liability risk in their underwriter .

Part I of this paper provides a background on the earlier generations of SPACs. The challenges faced by those SPACs created the impetus for the current generation of SPACs to adopt a key structural change that is an important source of dysfunctionality. Part II describes and analyzes the economics of the SPAC capital structure and other terms. As we explain, the basic features of SPACs create misaligned incentives and high transaction costs that manifest as a dilution overhang that one would expect to create a challenge for their eventual merger. Part III provides an empirical analysis of SPACs' ownership, dilution overhang, and performance. Finally, Part IV explain the persistence of SPACs despite their structural problems and poor performance. Their regulatory advantage seems to be a piece of the puzzle. To the extent it is not a full explanation, we describe a "sponsored IPO" and suggest that it can capture the non-regulatory benefits of SPACs at much lower costs. As such, it may be a next step in the evolution of efforts to respond to the apparent limits of the traditional IPO process.

## **I. Predecessors To Current SPACs**

SPACs originated as the legitimate cousin of the blank check companies associated with fraudulent pump-and-dump schemes of the 1980s. In response to those abuses, Congress enacted the Securities Enforcement Remedies and Penny Stock Reform Act of 1990, and the Securities and Exchange Commission promulgated Rule 419 pursuant to that Act. Their responses essentially shut down penny stock abuses. SPACs arose in the shadow of this crackdown. They were designed to avoid falling within Rule 419's definition of covered securities and thereby avoid that rule's restrictions—such as its prohibition on public trading between the time of the IPO and a merger or acquisition—but they also provided most of the investor-protection mechanisms prescribed by Rule 419.<sup>7</sup>

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<sup>7</sup> See Usha Rodrigues & Mike Stegemoller, *Exit, Voice and Reputation: The Evolution of SPACs*, 37 Del. J. Corp. L. 849, 875- (2013); Derek K. 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. Reimer, *Special Purpose Acquisition Companies: SPAC and SPAN, or Blank Check Redux*, 85 Wash. Univ. Law Rev. 931 (2007). Bonefant, Eric J. Savitz, *The New Blind Pools*, Wall Street Journal, 2005 <https://www.wsj.com/articles/SB113417937240719118>; Collins

The original SPACs appeared briefly in the 1990s and traded over the counter. Toward the end of the decade, however, when the tech bubble made the traditional IPO process readily available to small startups, interest in SPACs died out. IPOs were apparently more attractive than SPACs. Then, after the tech bust, a second generation of SPACs emerged and, aided by AMEX's listing approval in 2005, grew in volume to comprise 25% of the IPO market in 2007. In 2008, the NYSE and NASDAQ approved SPAC listings. However, with the onset of the financial crisis, SPACs again disappeared.

The basic structural elements of first-generation SPACs were as follows:

- When a SPAC went public, it issued units composed of one share and either one or two warrants that were 25% in the money. Some SPAC units also included rights that could be exchanged for 1/10 of a share if the company succeeded in consummating a merger.
- The SPAC's management had 18 months to consummate a merger with, or acquisition, of a private company.
- SPAC shareholders had a right to redeem their shares at the time management proposed a merger or acquisition. They kept their warrants and rights, however, even if they redeemed their shares.
- A portion of IPO proceeds (typically anywhere from 85%-95%) was held in trust and could be used only (a) to acquire a company, (b) to contribute to the capital of company with which the SPAC merges and thereby brings public, or (c) for to redeem shares. The remainder was available to the SPAC for operating expenses.
- If shareholders tendered 20% or more of SPAC shares for redemption, the merger could not proceed. In addition, if 50% of shares were voted against a merger it could not proceed.
- Prior to the IPO, the SPAC's sponsor took for itself shares that would amount to 20% of the SPAC's outstanding shares following the IPO (or, equivalently, 25% of the number of shares sold in the IPO). This was referred to as the sponsor's "promote."

Second-generation SPACs retained the basic terms and structure of the first generation but made some important changes. First, responding to the shareholder concerns that the 20% promote misaligned sponsor incentives and shareholder interests, sponsors invested their own funds in SPACs at the time of the IPO at market prices, with mean and median sponsor

investments of \$4.6 million and \$3.8 million, respectively. By putting some of its own cash at risk, the sponsor reduced the misalignment of its incentives with the interests of shareholders, but the alignment was far from perfect. With 20% ownership of the SPAC essentially for free, the sponsor could still make a very good return on a losing investment for the shareholders.

In addition, second-generation SPACs increased the threshold of redemptions that triggered a veto of a proposed merger. The mean and median thresholds were 27.2% and 30%, respectively, and the highest threshold was 40%.<sup>8</sup> Furthermore, in order to prevent a single shareholder from extracting a payment by threatening to hold up a merger, second-generation SPACs provided that if a shareholder accumulated more than 10% of the SPAC's shares it would lose the right to redeem those shares.<sup>9</sup> This provision ensured that no shareholder would hold a block of shares larger than that.

While the changes in the shareholder veto threshold were designed to reduce shareholder vetoes, a third change may have worked in the opposite direction. Second-generation SPACs increased the percentage of IPO proceeds available for redemption. Rodrigues and Stegemoller found that the mean and median percentage placed in trust were 96.3% and 98% and that the maximum was 110% (meaning that the sponsor put funds in the trust). Promising to return a larger portion of shareholders' investment made redemption more attractive in second-generation SPACs.

Over time, second-generation SPACs made other structural changes. Some reduced the number of warrants per unit from two to one. Some increased the warrant exercise price, so that late second-generation warrants were issued out of the money.<sup>10</sup> Later second-generation SPACs also extended the time limit to complete a merger from 18 months to an average of 24 months with options for half or whole-year extensions.<sup>11</sup>

There are no analyses of first-generation SPAC performance, but a small literature analyzes the performance of second-generation SPACs. Those studies find that performance was poor in two respects. First, shareholder vetoes were common. One study found that Between

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<sup>8</sup> As Rodrigues and Stegemoller explain, some of the changes in second-generation SPACs were adopted over time. Savitz (2005).

<sup>9</sup> Miller & Gallant, p. 2.

<sup>10</sup> Wittlin & Ferris, p. 3; Miller & Gallant, p. 2.

<sup>11</sup> See Thomas Friedmann & D. Chad Larson, *Special Purpose Acquisition Companies: A SPAC Evolution*, The Hedge Fund J. (May 2008), <https://thehedgefundjournal.com/special-purpose-acquisition-companies/>

2003 and 2010, 65 out of 163 SPACs, or about 40%, liquidated at the end of their term.<sup>12</sup> Another similarly found that between 2003 and 2006, 39% of SPACs liquidated.<sup>13</sup>

Second, SPACs that succeeded in merging lost roughly half their value within a year. One study found that mean and median returns for SPACs that went public between 2003 and 2006 were negative 41% and negative 58.9% for their first year following a transaction. In comparison, mean and median market returns were negative 1.3% and negative 5.2% for IPOs during the same period.<sup>14</sup> Another reported similar results for the period 2002 to 2009—a negative 24% return over 6 months, and a negative 55% return over a year.<sup>15</sup> A third study reported abnormal returns over 12 months for a buy-and-hold SPAC portfolio that were roughly negative 50% when compared to three benchmarks—the market, companies with comparable market-to-book ratios, and companies in a SPAC’s industry portfolios. These benchmarked returns were worse than IPO performance during the same period by roughly a factor of three.<sup>16</sup>

## **II. Third-Generation SPACs**

Third-generation SPACs maintain the same broad structure as first- and- second generation SPACs, but important changes in their terms have been made. In this Part, we explain those changes and analyze how they interact with other terms to produce substantial dilution overhanging their eventual merger.

### **A. Changes Made in The Terms of Third-Generation SPACs**

The central change made in third-generation SPACs was to de-link the consummation of a merger from shareholder redemptions. As explained above, earlier SPACs provided for a minority-shareholder veto of proposed mergers, which resulted in 40% of second-generation SPACs failing to consummate a merger and therefore liquidating. Sponsors of third-generation SPACs responded to this perceived problem by revising SPAC terms in three ways.

First, there is no longer a link between the volume of redemptions and consummation of a transaction. A deal can be consummated regardless of how many shares are redeemed. Of course, if the proposed transaction is a cash merger, the SPAC must have enough cash remaining

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<sup>12</sup> Cumming et al. (2013)

<sup>13</sup> Dimitrova (2015)

<sup>14</sup> Dimitrova (2015)

<sup>15</sup> Jenkinson and Sousa (2011)

<sup>16</sup> Kolb and Tykvova (2016)

after redemptions to acquire target shares. Similarly, if the proposed transaction is for stock, the merger agreement may provide that a certain amount of cash must remain in the SPAC at the time of the merger. But that is a matter between the SPAC and its merger partner.<sup>17</sup> In addition, whereas second-generation SPACs conditioned shareholders' right to redeem their shares on voting those shares against a proposed transaction, third-generation SPACs do not. A shareholder can now vote in favor of a merger and redeem shares. As a result, even if a majority of a SPAC's shares are submitted for redemption, the transaction can go forward. The deal would terminate only if a majority of shares are voted against it, and there is no reason for redeeming shareholders to vote against a proposed merger. Indeed, as explained below, there is good reason for them to vote in favor of the transaction.

A second set of changes in third-generation SPACs has been to reduce the number of warrants issued to the public in an IPO of SPAC units and to increase their exercise price so that the warrants are out of the money by 15% when issued.<sup>18</sup> These changes reduce the dilutive impact of the warrants on post-merger shareholders. At the same time, some SPACs have partially offset this reduction in warrants by including rights in their units rights, usually to acquire 1/10 of a share at no cost when the SPAC merges.

A third change that third-generation SPACs adopted was to put all IPO proceeds in trust for public shareholders' benefit, and in many cases for the sponsor to contribute additional cash to the trust. Consequently, for shareholders that choose to redeem their shares, SPACs now promise an essentially risk-free return equal to or greater than the Treasury note rate—plus a free warrant (and, if included in the units, a right) to boot.

The remaining terms and structure of SPACs are essentially unchanged from the second generation. Sponsors continue to take 20% of a SPAC's post-IPO stock at a nominal cost. They also put their own funds at risk but investing in SPAC stock and/or warrants at market prices contemporaneously with the IPO.

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<sup>17</sup> SPACs require that, following redemptions, there remains at least \$5 million in the trust. This is the amount the stock exchanges require companies to have in net tangible assets at the time of an IPO in order to avoid being deemed a penny-stock company subject to Rule 419. Although this requirement in the context of post-redemption SPACs does not implicate this rule, but SPACs nonetheless adopt it in order to further differentiate SPACs from penny stocks.

<sup>18</sup> The warrants are also typically subject to a cap ranging from \$18 to \$24 per share. The way this works is that the company can buy back unexercised warrants at nominal cost if the SPAC's share price remains above the cap for a twenty-day period.

The case study below illustrates how these terms come into play in an actual SPAC from its IPO through its merger. In Section C, we analyze the economics of these terms to show how they produce transaction costs for an eventual SPAC merger and misaligned incentives between the sponsor and SPAC shareholders in the selection of a merger target.

#### B. A Case Study: GP Investments Acquisition Corporation

On May 26, 2015, GP Investments Acquisition Corporation (GPIAC) issued 17,250,000 units for \$10 per unit, raising a total of \$172.5 million in an IPO. The units consisted of one share and one-half of a warrant. GPAIC's shares and warrants traded on the NASDAQ. Consistent with the near-universal practice GP Investments took a "promote" equal to 20% of GPIAC's post-IPO outstanding shares for the nominal price of \$25,000. In addition, contemporaneously with the IPO, GP Investments paid \$5.5 million for 6,062,500 warrants for the purchase of one share per warrant at a strike price of \$11.50. As explained above, the proceeds of this investment were used to pay the costs of the IPO and all costs that would be incurred through the point of closing a business combination.<sup>19</sup>

Citigroup was the underwriter for the offering. It received 2.5% of the proceeds, or \$4,312,500 at the time of the IPO. In addition, it would receive 3%, or \$5,175,000, in deferred underwriting fees if and when the GPIAC entered into a business combination, and another .5%, or \$862,500, at a time of GPIAC management's choosing.<sup>20</sup> Citigroup thus stood to gain up to \$10,350,000 from the deal.

GPIAC's post-IPO equity capitalization included the following:

- 17,250,000 common shares issued to the public during the IPO
- 4,312,500 founder shares with the same economic rights as common stock
- 8,625,000 common shares issuable upon the exercise of warrants sold in the IPO with a strike price of \$11.50/share and a cap of \$24/share
- 6,062,500 warrants sold to the sponsor in a private placement at the time of the IPO with a strike price \$11.50/share (and no cap).<sup>21</sup>

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<sup>19</sup>[https://www.sec.gov/Archives/edgar/data/1635282/000114420415032478/v410839\\_424b4.htm](https://www.sec.gov/Archives/edgar/data/1635282/000114420415032478/v410839_424b4.htm) p. 1.

<sup>20</sup> The prospectus stated that "[t]he underwriter will be entitled to an underwriting discount of 6.0%, of which two and one-half percent (2.5%) will be paid in cash at the closing of the Proposed Offering, including any amounts raised pursuant to the over-allotment option, and up to three and one-half percent (3.5%) will be deferred. The deferred fee includes 0.5% that may be granted to the underwriter at the Company's sole discretion, as determined at the time of the Proposed Offering."

<sup>21</sup> GP Investments Corporation 10-Q for the quarter ended March 31, 2015.

[https://www.sec.gov/Archives/edgar/data/1635282/000114420415040701/v414281\\_10q.htm#item2](https://www.sec.gov/Archives/edgar/data/1635282/000114420415040701/v414281_10q.htm#item2)

In February 2016—about 9 months after its IPO—GPIAC began negotiating an acquisition of World Kitchen. On April 19, 2016, GPIAC and World Kitchen entered into an agreement under which GPIAC would acquire World Kitchen for \$500 million—consisting of 75% cash and 25% equity in the new company. As a condition to closing, World Kitchen required the following: (i) a minimum cash balance of \$122 million in the GPIAC trust account that would be used for operating expenses; and (ii) redemptions of no more than 30% of GPIAC shares.<sup>22</sup>

By late July 2016—10 months before GPIAC’s acquisition deadline—there was concern that redemption demands might exceed the 30% limit. In an attempt to save the transaction, the parties amended the merger agreement to allow GPIAC to make private placements to GP Investments, the sponsor, or to third parties at \$10 per share in order to replace cash spent to redeem shares. This amendment stipulated that new issuances would be capped at \$115 million, thereby allowing redemption of approximately two thirds of GPIAC shares.<sup>23</sup>

The amendment, however, proved to be futile. In October 2016, 83% of GPIAC shareholders voted to approve the merger, but close to 90% of shareholders indicated an intent to redeem their shares. As a result, the deal fell apart.<sup>24</sup>

In May 2017, two months before GPIAC would have liquidated, GPIAC’s sponsor identified another potential target. The target was Rimini Street, a company that provided support services to users of Oracle, SAP and other enterprise management software systems (not a “consumer goods and services, retail [or] hospitality” company, as the sponsor had preferred. Rimini Street had been vocal about its desire to go public for several years—even registering for

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<sup>22</sup> GP Investments Corporation 8-K, filed April 18, 2016.  
[https://www.sec.gov/Archives/edgar/data/1635282/000114420416095908/v437382\\_8k.htm](https://www.sec.gov/Archives/edgar/data/1635282/000114420416095908/v437382_8k.htm)

<sup>23</sup> GP Investments Corporation 8-K, filed July 29, 2016.  
[https://www.sec.gov/Archives/edgar/data/1635282/000110465916135103/a16-15669\\_18k.htm](https://www.sec.gov/Archives/edgar/data/1635282/000110465916135103/a16-15669_18k.htm)

<sup>24</sup> GP Investments Corporation 8-K, filed November 14, 2016.  
[https://www.sec.gov/Archives/edgar/data/1635282/000114420416133638/v452933\\_8k.htm](https://www.sec.gov/Archives/edgar/data/1635282/000114420416133638/v452933_8k.htm). We explain below why shareholders that redeem their shares vote in favor of a merger.

an IPO in 2013—but it was never able to do so.<sup>25</sup> The delay was in large part due to the uncertainty created by ongoing legal battles with Oracle.<sup>26</sup>

In contrast to the proposed acquisition of World Kitchen, the Rimini Street deal would be a stock-for-stock merger after which GP Investments and GPIAC's public shareholders would hold a minority position. If there were no redemptions, former GPIAC shareholders, including GP Investments, would own 25% of the surviving company.<sup>27</sup> A condition of closing was that there be at least \$50 million in the GPIAC trust. GP Investments was required to guarantee \$35 million of that amount by committing to either invest that amount itself or obtain new equity financing from a third party.

GPIAC shareholders voted 99% of their shares to approve this deal, while redeeming 92% of public shares outstanding.<sup>28</sup> Pursuant to its commitment to replace cash used to redeem shares, GP Investments and an affiliate invested \$36 million in exchange for 3,600,000 GPIAC shares,<sup>29</sup> thereby increasing GPIAC's cash above the threshold required by the merger agreement.<sup>30</sup>

As a result of this transaction, GP Investments had invested a total of \$41,525,000 in GPIAC (consisting of \$25,000 prior to the IPO, \$5.5 million for the warrants acquired at the time

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<sup>25</sup> Press Releases, *Rimini Street Plans to Conduct Registered Public Offering of Its Common Stock*, Rimini Street (Nov. 6, 2013), <https://www.riministreet.com/press-releases/11062013>; Alex Woodie, *Rimini Street Finally Finds Its Way to Wall Street*, IT Jungle (Jan. 15, 2018), <https://www.itjungle.com/2018/01/15/rimini-street-finally-finds-way-wall-street/>

<sup>26</sup> Oracle filed a lawsuit in 2014 against Rimini Street alleging that Rimini illegally installed Oracle software. Julie Bort, *A Legal Showdown With Oracle Threatens Software Company That Just Filed a \$60 Million IPO*, BUSINESS INSIDER (Feb. 18, 2014), <https://www.businessinsider.com/oracle-suit-threatens-riminis-60m-ipo-2014-2>.

<sup>27</sup> GP Investments Corporation 8-K, filed May 16, 2017.

<https://www.sec.gov/Archives/edgar/data/1635282/000114420417027775/0001144204-17-027775-index.htm>

<sup>28</sup> Rimini Street, Inc. 8-K at 3, filed October 6, 2017. GPIAC could not complete the merger within two-year lifespan of the company. As is common, its charter allowed it to get shareholder approval for an extension so long as shareholders were permitted to redeem their shares at that point. GPIAC's shareholders voted in favor of the extension needed but 1,552,724 shares were redeemed at that time. The redemption total of 15,838,788 total includes those redemptions and 14,286,064 shares redeemed in connection with the merger itself.

<https://www.sec.gov/Archives/edgar/data/1635282/000156761917002192/0001567619-17-002192-index.htm>, Rimini Street, Inc. 8-K at 3, filed October 16, 2017.

[https://www.sec.gov/Archives/edgar/data/1635282/000156761917001355/s001739x2\\_ex2-1.htm](https://www.sec.gov/Archives/edgar/data/1635282/000156761917001355/s001739x2_ex2-1.htm).

<sup>29</sup> *Transaction Between GP Acquisition and Rimini Street is Completed*, GP Investments (Oct. 11, 2017), <http://www.gp-investments.com/transaction-between-gp-acquisition-and-rimini-street-is-completed/>.

<sup>30</sup> GP Investments Corporation 8-K, filed October 16, 2017.

[https://www.sec.gov/Archives/edgar/data/1635282/000156761917002192/s001919x1\\_8k.htm](https://www.sec.gov/Archives/edgar/data/1635282/000156761917002192/s001919x1_8k.htm)

of the IPO, and the additional \$36 million investment). After the redemptions, GP Investments held 84% of GPIAC's common stock prior to the merger,<sup>31</sup> and the public shareholders held 16%.

The GPIAC-Rimini Street merger closed on October 10, 2017.<sup>32</sup> GP Investments and its affiliate held approximately 13.4% of the combined company, the non-redeeming former GPIAC public shareholders held 2.4%, and the investment banks that advised GPIAC held .66%.<sup>33</sup>

As of the day following the merger, the shares held by GPIAC's public shareholders that had not exercised their redemption right were worth \$9.61 per share (47 cents less than the \$10.07 per share paid for redemptions). The aggregate value of public shares that were not redeemed was \$13,561,747 on the day following the merger.<sup>34</sup> The value of GP Investments' shares, for which it had paid a total of \$41,525,000, was \$75,462,525,<sup>35</sup> a paper gain of over 80%. As is typical of SPACs, however, GP Investments had agreed that it would not sell its shares until one year after the transaction, unless the share price rose to \$12 for 30 days.

As shown in Figure 1, below, Rimini Street's share price declined substantially over the following year and has not traded above \$10/share at any point since the merger. A year after the merger, Rimini Street's shares were worth approximately \$6/share. A public shareholder that held its shares would thus have seen a decline of 40% since the IPO. The warrants were trading at 80 cents, so a shareholder that kept its warrants (one half a warrant per unit), would have an additional 40 cents of value, which would bring the value of its holdings up to \$6.40 per share and the loss on its investment to 36%.

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<sup>31</sup> GP Investments also held warrants for 6,062,500 shares. GP Investments held 4,312,500 from prior to the IPO and another 3.6 million shares from the investment it made immediately before the merger.

<sup>32</sup> Rimini Street, Inc. 8-K, filed October 16, 2017.

<https://www.sec.gov/Archives/edgar/data/1635282/000156761917002192/0001567619-17-002192-index.htm>

<sup>33</sup> Rimini Street, Inc. 8-K, filed October 10, 2017 and 8-K filed October 16, 2017. The company's independent directors held 60,000 shares, and Citigroup, which served as financial advisor to GPIAC, and Cowen, which served as financial advisor to Rimini Street received 388,437 shares for their advisory services.

<https://www.sec.gov/Archives/edgar/data/1635282/000156761917002192/0001567619-17-002192-index.htm>; Agreement and Plan of Merger at 37, dated as of May 16, 2017,

[https://www.sec.gov/Archives/edgar/data/1635282/000156761917001897/s001739x13\\_424b3.htm#tAA](https://www.sec.gov/Archives/edgar/data/1635282/000156761917001897/s001739x13_424b3.htm#tAA)

<sup>34</sup> This figure is based on the number of shares held by remaining GPIAC public shareholders, multiplied by the closing price of Rimini Street shares on October 11, 2017—the day following the merger. Rimini Street, Inc. (RMNI) adjusted closing share price for Oct 11, 2018, YAHOO FINANCE (last accessed Jan. 16, 2019),

<https://finance.yahoo.com/quote/RMNI/history?period1=1539241200&period2=1539846000&interval=1d&filter=history&frequency=1d>.

<sup>35</sup> This figure is based on the number of shares held by GP Investments, multiplied by the closing price of Rimini Street shares on October 11, 2017—the day following the merger. *Id.*

GP Investments' shares were worth approximately \$47 million a year after the merger, and its warrants were worth \$4.85 million for a total value of \$52.85 million.<sup>36</sup> So, as of a year following the merger, GP Investment had reaped a 27% return on its investment of \$41,425,000 and was free to sell its shares at that point. At the two-year anniversary of the merger, GPIAC shares had declined further and traded at approximately \$4 per share, for a total drop since the merger of 60%.

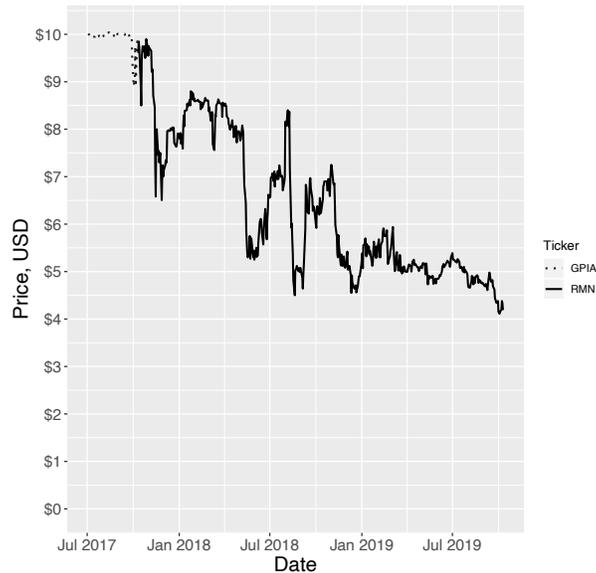
The other stakeholder in the deal was Citigroup, the underwriter of GPIAC shares in its IPO. Citigroup collected its deferred fees when the merger closed, bringing it a total of \$10,350,000 in underwriting fees.

As we will show, GPIAC's experience was similar to that of other SPACs in several respects. Shareholders voted overwhelmingly in favor of a proposed merger but nonetheless redeemed their shares in very high numbers; a large additional investment, in this case by the sponsor, was made to replace the cash paid to redeem the shares; far from making an acquisition, as the "A" in "SPAC" implies, GPIAC made a minority investment in Rimini Street; non-redeeming shareholders lost nearly half their investment within a year and more in the following year; and the sponsor earned a substantial return on its investment notwithstanding the losses to shareholders.

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<sup>36</sup> This is based on the price of public warrants. Since GP Investments' warrants had no cap, as the public warrants did, they were theoretically worth more than the public warrants.

Figure 2: GPIAC Share Price Following Merger



### C. Economics of SPAC Terms

In this part, we explain how the changes introduced in third-generation SPACs have dramatically changed how SPACs operate. Section A describes how the route to a public listing through a SPAC—a route we describe as having a Rube Goldberg quality—is now quite different from that of earlier SPACs. Section B analyzes each element of third-generation SPACs—those that are new and those carried over from the past—and explains how they interact to create misaligned incentives and high transaction costs that manifest as an overhang of dilution on the eventual merger.

#### 1. The Rube Goldberg Nature of SPACs' Backdoor to a Public Listing

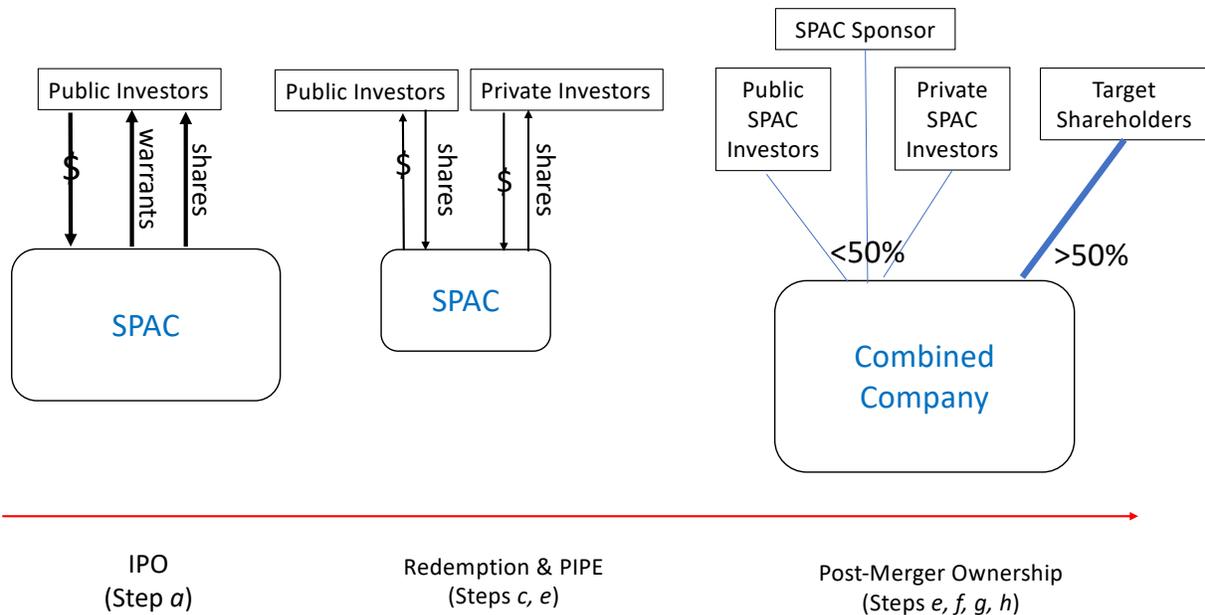
GPIAC's experience is typical of third-generation SPACs. On paper, GPIAC became a public company in 2015, when it raised money in its initial IPO. But by the time it completed its merger in 2017, its initial shareholders had essentially all exited their investment by redeeming their shares. The sponsor's ability to close the deal with Rimini Street depended entirely on its ability to convince a new set of investors that the terms it proposed merger were attractive.

This captures the essence of what we term the Rube Goldberg nature of third-generation SPACs: they chart a circuitous path for companies to go public, with features that seem to do little to advance that ultimate goal. SPACs begin with an IPO that, among 2019 and 2020

SPACs, raised between \$39 million and \$690 million. This money is then simply placed in a trust to sit for two years. IPO-stage investors do not appear to have bought into GPIAC because they wanted to invest in the sponsor’s skill in identifying and negotiating a good investment—as an investor in a private equity fund does. The sponsor offered them two options, and in each case an overwhelming majority chose to take their money back. Nonetheless, the second merger proceeded with new investors.

The outcome occurred because current SPACs have de-linked redemption and consummation of a proposed merger. The new merger process for third-generation SPACs is illustrated in Figure 3: (a) public investors buy stock and warrants in a SPAC’s IPO; (b) within two years, the SPAC’s sponsor proposes a merger by which a private company would go public; (c) often, well over half the SPAC’s shares are tendered for redemption; (d) nearly all shares are nonetheless voted in favor of the merger; (e) contemporaneously with the merger, the sponsor itself and/or other private investors enter into a private investment in public equity, or PIPE, transaction in which they buy new shares of the SPAC in order to replenish some of the cash the SPAC paid out to redeem its shares; (f) the merger proceeds; (g) SPAC’s remaining public shareholders own a small slice of the post-merger company’s equity; and (h) the SPAC sponsor and PIPE investors typically own small slices of the company’s equity.

Figure 3: The SPAC Merger Process



So long as the sponsor can ensure that there is enough cash in the SPAC to comply with terms to which it has agreed in the merger agreement, the sponsor is in control of whether the merger occurs. Sponsors have three ways to meet a target's minimum cash requirement when they expect redemptions to be high. First, as in the GPIAC-Rimini Street merger, the sponsor itself can invest additional funds in the SPAC. Second, sponsors can attract one or more third parties to make investments contemporaneously with the merger. The SPAC typically sells shares to third-party investors for \$10 per share but sponsors commonly reduce the effective price by transferring some of their shares or warrants to the third-party investors, and in some cases, the SPAC issues shares to these investors at less than \$10 per share. Third, the sponsor may make side payments—again, by transferring shares or warrants—to one or more large public shareholders of the SPAC, or investors that will buy shares on the public market, in exchange for their commitment not to redeem their shares.

It is common for the amount of post-redemption cash in a SPAC to be low even after the sponsor has arranged for the SPAC to have enough cash for the deal to go forward. This is not a problem. Most SPAC mergers are stock-for-stock mergers, with the exchange ratio reflecting the amount of equity in the SPAC. So, the result is simply that the former SPAC shareholders hold a small percentage of the post-merger company's shares. GPIAC shareholders' ownership of the post-merger company is typical of third-generation SPAC mergers. The combined share ownership of the public shareholders, the sponsor and the underwriter was a mere 16.5% of the post-merger company. SPACs typically do not acquire private companies, nor do they acquire control of them; they typically merge with private companies in transactions that leave the former public shareholders of the SPAC and the SPAC's sponsor with small minority interests in the merged company and the former shareholders of the private company in control of a now-public company.

By breaking the link between the redemption of shares and consummation of a merger, and by making redemption attractive, third-generation SPACs have created a Rube-Goldberg arrangement in which funds are raised in an IPO and often returned to shareholders, only to be replaced with new funds at the time of a merger. In many SPACs, the IPO simply gets the SPAC up and running as a public company so that the sponsor will be in a position to bring a company public and provide it with an equity infusion once it finds a target. The disconnect between the

SPAC IPO and the eventual merger is what leads us to characterize third-generation SPACs as having a Rube Goldberg quality. But more important than the roundabout quality of SPACs, the temporal and functional separation of the IPO and the eventual merger is the source of substantial transaction costs that manifest as dilution. In section II.2 we explain these conceptually. In Section III, we measure them empirically.

## 2. The Interaction of SPAC Terms—Transaction Costs and Misaligned Incentives

A SPAC’s redemption right interacts with the following elements of the SPAC process to misalign the sponsor’s incentives and the shareholders’ interests in selecting a merger target and to dilute the shares issued in the eventual merger transaction: (a) the sponsor’s 20% “promote,” (b) the sponsor’s initial investment, (c) underwriting fees, and (d) the publicly issued warrants. From a theoretical perspective, the consequence is a bias on the part of sponsors to propose merger transactions that overpay for targets. That bias, we expect, would lead to frequent shareholder rejection of merger proposals and poor post-merger returns for mergers that are consummated. We investigate SPAC outcomes empirically in Section III.C.

### a. The Sponsor’s “Promote” and Cash Investment

Before a SPAC goes public, its sponsor receives a number of shares that will equal 20% of the company’s shares outstanding after the IPO. The sponsor pays a nominal price for these shares. This initial allocation of shares, known as the sponsor’s “promote,” compensates the sponsor for the work it will do over the next two years to find a target with which to merge, and for the sponsor’s risk of failing to do so. In some cases, when the SPAC merges, the target or a PIPE investor negotiates for the sponsor to transfer some of its shares as a side payment. The target or a PIPE investor may also negotiate for the sponsor to cancel some of its shares, thereby transferring value to all other shareholders. Nevertheless, as we show in Section III.C, the sponsor typically keeps a large portion of the promote.

In effect, the promote is a tax on a SPAC’s merger. For a merger to be profitable to both SPAC and target shareholders, the merger must create a surplus greater than the tax (plus others discussed below). The potential sources of surplus are the value of becoming a public company, the equity infusion the SPAC provides, and whatever benefits the SPAC’s management and sponsor may provide by advising and supporting the post-merger company.

The promote also creates a divergence of interest between the sponsor and the SPAC's shareholders. The sponsor's upside parallels the shareholders' upside, but if the SPAC overpays in a merger and the post-merger shares decline in value, the sponsor still gains. The promote thus creates a wedge between shareholder and sponsor interests.

In order to reduce the divergence of sponsor incentives and investor interests and to allow all IPO proceeds to be put in trust for shareholders, sponsors invest in SPAC shares and/or warrants contemporaneously with the SPAC's IPO. The sponsor's investment covers the cost of the IPO, operating costs while the SPAC is searching for a merger target, and often a subsidy to the trust so that shareholders that redeem their shares receive more than a Treasury note return. The sponsor's investment brings its incentives into closer alignment with shareholder interests in choosing to enter into a merger, but the alignment is far from perfect. The sponsor will lose this investment if it fails to strike a deal with a merger target, but because of the promote, the sponsor can come out ahead, even with a bad deal. As the two-year deadline for the sponsor to find a merger target approaches, the sponsor's investment creates a widening divergence between the sponsor's interest and those of the shareholders. As we saw in the GPIAC transaction, which occurred shortly before the end of GPIAC's two-year term, the public shares lost 40% in value as of one year after merging with Rimini Street, but the sponsor nonetheless reaped a 27% gain on its total investment.

c. Underwriting Fees

SPAC Underwriting fees are typically 5.5% of IPO proceeds, which is slightly less than typical fees in a traditional IPO of comparable size. Of that amount, about 3.5% of proceeds is typically conditioned on the SPAC consummating a merger. This appears reasonable, but recall that in most SPACs, most shares are redeemed. The underwriting fee is not redeemed.<sup>37</sup> So, if one measures the fee in relation to the funds that are ultimately invested in a company going public—an apples-to-apples comparison with traditional IPOs—the underwriting fee is quite high. For example, if 50% of a SPAC's shares are redeemed, its effective fee is 11%, and if 75% of shares are redeemed its effective fee is 22%. As we show in Section III.C, redemptions above 95% are not so uncommon. Underwriting fees thus constitute a substantial cost for a SPAC. When it later merges, those costs will be reflected as shares owned by the sponsor for which

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<sup>37</sup> [cite two exceptions where there were modest adjustments negotiated at the time of merger].

there is no longer cash in the SPAC, and to the extent public shares have been redeemed, there is no equity for the post-merger company.

d. Publicly Held Warrants and Rights

The warrants and rights included in the units a SPAC issues in its IPO compensate investors for having their funds tied up between the time of an IPO and a merger. Units contain at most one warrant for one share with an exercise price 15% out of the money. Most units contain only shares and warrants, but some include rights as well. Typically, a right converts into 1/10 of a share at the time of a merger at no cost. After the SPAC's IPO, warrants and rights trade separately from shares. They are not subject to redemption, so when a shareholder redeems shares, it keeps its warrants and rights (unless it has sold them).

Warrants and rights are dilutive of post-merger shares. Because the extent of dilution depends on the ratio of warrants to shares, redemptions exacerbate dilution. Moreover, the right to redeem can create a dynamic similar to a bank run. A shareholder that otherwise might not redeem its shares may choose to redeem because it expects others to redeem and thereby reduce the value of the SPAC's remaining shares. Such a run is a collective action problem that results in more redemption than would occur based on the merits of a proposed merger. This can result in failed mergers where there is not enough equity in a SPAC to meet a target's minimum demands.

Like the sponsor's promote and the underwriting fee, the warrants and rights associated with redeemed shares are a tax on the SPAC's merger. Because the redeeming shareholders have extracted all of their contribution to the equity of the SPAC, their warrants and rights are in effect free claims against the post-merger company. At the time of a merger, the trading price of a warrant tends to be about \$0.50, so the aggregate value extracted from the company is \$0.50 times the number of warrants outstanding that are associated with redeemed shares. The rights are worth 1/10 of a share, so their aggregate value is \$1 times the number of rights associated with redeemed shares.

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In sum, the sponsor's promote, the underwriting fee per non-redeemed share, and the warrants held by redeeming shareholders all tax the eventual merger transaction. The promote

will be reflected in shares with no cash behind them that will dilute the post-merger shareholders; in the case of the underwriting fee, it will be cash that has been spent to attract investment that will largely be returned. And in the case of warrants and rights, it is the prospect of future dilution.

If the SPAC merger generates enough surplus, then the target and the SPAC shareholders can come out ahead. If the merger does not generate enough surplus, one or both of them will lose out. Who wins and who loses when the surplus is less than these costs will be determined by bargaining power, skill at evaluating the prospects of the post-merger company, and luck.

### **III. Empirical Analysis**

In Part II, we analyzed the economics of SPACs from a theoretical perspective. We discussed how the redemption right in third-generation SPACs separated an investment in a SPAC's IPO from an investment in its merger—a separation that could result in a process of financing and refinancing that we describe as a Rube Goldberg process. We also analyzed how other terms of SPACs create misaligned incentives and an overhang of potential dilution at the time of the merger. In this Part, we analyze the extent to which the structure and terms of SPACs are reflected empirically in their operation and performance. In Section A, we analyze the financing and refinancing that occurs in a SPAC IPO and merger. We investigate empirically the extent to which investors that invest in a SPAC's IPO remain invested in its merger—in other words, the extent to which the IPO and merger are independent from one another. In Section B, we investigate the empirical details of the sponsor's promote, underwriting fees, and the costs imposed by warrants—all of which create the overhang of dilution that we have discussed. In Section C, we look at the post-merger returns to shareholders and sponsors. Although the analysis of SPAC performance is motivated by our theoretical and empirical analysis of misaligned incentives and dilution inherent in the SPAC structure, we cannot conclude that there is a causal relationship between the two. There are too few SPACs and their terms are too uniform to test any hypotheses statistically. Our goal is simply to determine whether SPAC performance suggests that in fact the structural costs we have identified are in fact serious concerns.

For this empirical analysis, we use two cohorts of SPACs. The first cohort consists of SPACs with IPOs in 2015, the year in which SPACs began to appear in significant volume.

SPACs in this cohort merged in 2017, so we can observe their performance over two years as public companies. Our second cohort consists of companies that either went public or merged in 2019 or 2020. We study this cohort so that our analysis is current. The SPAC sector has become “hot” in the past two years. Press articles on SPACs appear daily, declaring that “SPACs are booming,”<sup>38</sup> and are “hotter than ever,” touting a recent SPAC IPO or merger, or reporting a former SPAC’s skyrocketing post-merger performance<sup>39</sup> By analyzing data on both IPOs and mergers in 2019 and 20120, we investigate these reports and ensure that our findings are current.

A. Who Invests in SPACs and Who Remains Invested?

Are SPACs “democratized private equity,” as some have described them? That is, do retail investors invest in a SPAC as a bet on the sponsor’s skill in identifying and merging with an attractive private company that it brings public? SPACs are marketed as offering this sort of investment, whether to retail investors or others. On the other hand, people involved in the SPAC market are well aware that there is a group of hedge funds known as the “SPAC Mafia,” which invest in SPAC IPOs and trade SPAC shares between the IPO and merger but do not necessarily remain invested through the merger. In this section, we investigate two related empirical questions. First, who invests in SPACs between the time of their IPO and their merger? Second, to what extent do pre-merger investors dispose of their shares before the merger—whether by redemption or sale on the market? In other words, are SPACs “democratized,” and are they “private equity”? The answers to these questions in turn shed light on a key question in the broader analysis of this paper: what useful role, if any, do the SPAC IPO and the period between the IPO and the merger play in carrying out the sole function of SPACs, which is to bring companies public?

In order to investigate share ownership of SPACs, we use data from SEC Form 13F filings—the only comprehensive source of share ownership data readily available. Large funds are required to file Form 13F, in which they disclose their shareholdings on a quarterly basis.<sup>40</sup> Data from those filings allow us to determine the extent to which large funds hold SPAC shares,

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<sup>38</sup> <https://www.barrons.com/articles/spacs-are-booming-these-21-may-be-about-to-announce-deals-51594029600>

<sup>39</sup> <https://www.fool.com/investing/2020/06/27/special-purpose-acquisition-companies-why-spacs-ar.aspx>

<sup>40</sup> 13F filing requirements are established under §13(f) of the Securities Exchange Act, codified as 15 U.S.C.A. §78m. Roughly speaking, disclosure is required from “institutional investment managers” which covers institutions with at least \$100 million in securities holding investing on their own account and natural persons with at least \$100 million in securities investing on behalf of another. Thus, most institutional investors will be covered, but wealthy individuals investing on their own behalf will not.

and the extent to which they are repeat players. We cannot address the “democratization” question directly by counting shares held by small retail investors. But by determining how many shares 13F filers hold, we can place an upper limit on the extent of “democratization” that SPACs accomplish.

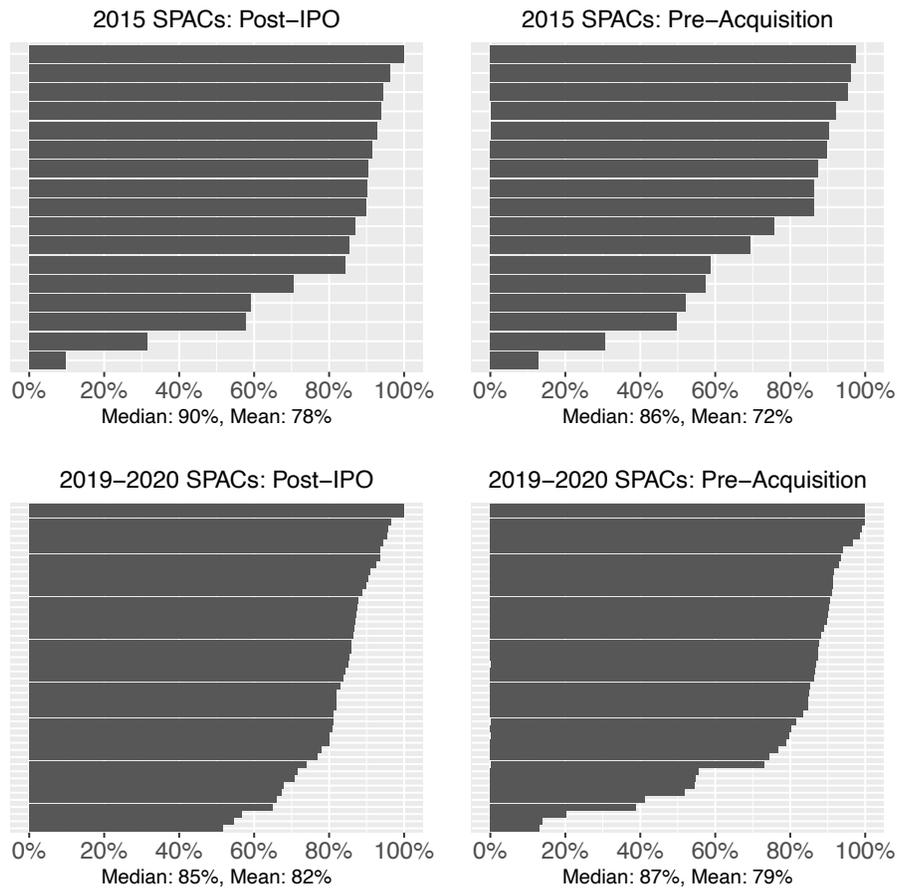
1. Who Invests in SPACs Between the IPO and the Merger?

Figure 4 shows the percentage of publicly traded shares held by 13F filers for each SPAC in our 2015 and 2019-20 cohorts as of the first 13F filing following the IPO and last 13F filing date prior to the merger. Within each cohort, 13F share ownership is essentially constant from the time of the IPO until the merger.<sup>41</sup> Furthermore, there is essentially no difference in ownership by 13F filers across the two cohorts. The median ownership by 13F filers ranges from 85% to 90%, while mean ownership by 13F filers ranges from 72% to 82%. These figures may understate the extent to which large institutional shareholders hold SPAC shares not held by insiders. For example, the plots for 2015 IPOs show one outlier with very low 13F ownership. This is E-Compass, which had a single wealthy individual affiliated with the sponsor purchase half of the shares sold in the IPO. We expect that other outliers have similarly idiosyncratic explanations. Furthermore, some shares not owned by 13F filers are surely held by wealthy individuals and institutional shareholders that are not required to file Form 13F.

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<sup>41</sup> Figure 4 presents ownership directly following SPAC IPOs and directly before their mergers. 13F ownership is, unsurprisingly, very similar at other points pre-merger – e.g. directly before the merger announcement.

Figure 4: Percent of SPAC Shares Owned by 13F Filers



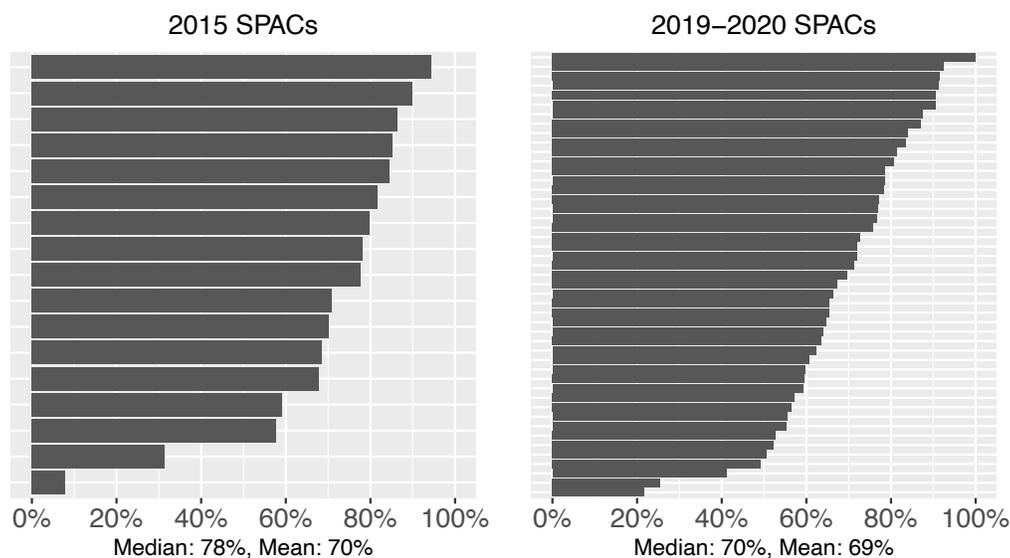
Based on these data, it seems clear that the description of SPACs as “democratized” is off the mark. Some retail investors may own shares prior to a merger announcement and then hold shares in the post-merger company, but the figures above show that this does not happen in sufficient numbers to warrant a description of SPACs as instruments of financial democracy.

What about the SPAC mafia? Is there a group of 13F filers that regularly invest in SPACs in high volume between the time of the IPO and the merger announcement? We define SPAC mafia members as 13F filers that, between the time of a SPAC’s IPO and its announcement of a merger, hold at least 100,000 shares in at least 10 SPACs that have gone public between 2010 and 2020.

SPAC Mafia members, defined as we have, account for roughly 70% of total shareholdings in both cohorts combined. The top five SPAC Mafia funds held 25% and 15%, respectively, of total 2015 and 2019-20 shares. Thus, while there appears to be little change in the role of the SPAC Mafia overall, shares in the recent cohort of SPACs are distributed among a

larger number of SPAC mafia members. Furthermore, as Figure 5 shows, in each cohort there are a small number of SPACs that take a very different approach to IPO-stage funding, relying far less heavily on the SPAC Mafia than do their peers as a whole.

*Figure 5: 'SPAC Mafia' Ownership of Total SPAC Shares – First Quarter Post-IPO*



In sum, large funds dominate SPAC shareholdings between the IPO and the merger announcement. Among them, the SPAC Mafia, hold well over a majority of shares. In the next section, we investigate whether these shareholders tend to remain invested in a SPAC's merger.

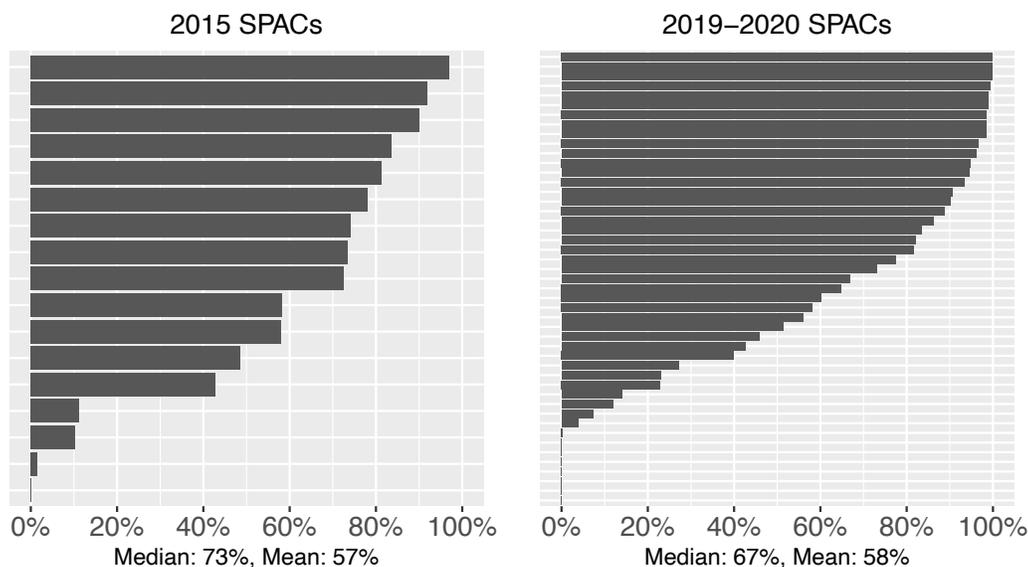
## 2. Redemptions and Refinance

As we have explained, the liberal redemption right that SPACs provide raises the possibility that, when it merges, a SPAC will have to obtain new equity to meet a target's cash needs. SPACs do so with private placements in which the sponsor itself adds to its initial investment and/or third parties invest. In this section, we analyze the extent to which SPAC shareholders redeem their shares and the extent to which SPACs refinance through private placements.

Figure 6 shows redemption rates among SPACs in the 2015 and 2019-20 cohorts. Seventeen SPACs in the 2015 IPO cohort merged. Among them, redemptions ranged from zero to 97%, with a mean and median of 57% and 73%, respectively. There are forty-six SPACs in

the 2019-20 cohort that merged as of June 2020. Redemption rates among those SPACs were similar to those in the 2015 cohort, with a mean and median of 58% and 67%, respectively.

*Figure 6: SPAC Redemptions*



To replace the cash lost to redemptions, nine of the 17 SPACs in the 2015 cohort raised new equity from private investors in conjunction with their mergers, and in four the sponsor invested additional funds. Among the nine SPACs with new equity raised from third parties, the new equity comprised between 14% and 92% of the SPAC’s total equity at the time the SPAC entered into the merger, with the mean and median being 58% and 59%, respectively.<sup>42</sup> Among the four SPACs in which the sponsor invested additional funds at the time of the merger, the amount the sponsor invested ranged from 1% to 72% of the amount of equity in the SPAC.<sup>43</sup> In the 2019-20 cohort, third party investments at the time of the merger spanned a similarly broad range, with mean and median amounts of 51% and 47%, respectively. Among SPACs in which sponsors made additional investments at the time of the merger, their mean and median investments were 23% and 15%, respectively. It is thus common, in current and past SPAC

<sup>42</sup>Funds attributable to private placements include amounts paid for common and preferred shares and, less commonly, for warrants. We exclude from the calculation the sponsor’s initial investment, much of which would have been spent on expenses incurred prior to the merger. We treat an investor as a third party so long as it was not affiliated with the sponsor. In some cases, a third party is an investor in the target.

<sup>43</sup> We estimated total equity as the number of public shares outstanding following redemptions plus funds that the sponsor and third parties invested at the time of the merger.

mergers, for most of the funding a SPAC contributes to a target company to come from an equity infusion concurrent with the merger, as opposed to funds the SPAC had raised in its IPO.

### 3. Market Exit

The extent of redemption and refinancing in connection with SPAC mergers shows that a SPAC's IPO and its financing of a target are often independent as an empirical matter. In most SPACs, about two thirds to three quarters of IPO proceeds are returned to shareholders at the time of the merger, and about half the funds invested in the target company comes from new equity investment. This is consistent across the 2015 and 2019-20 cohorts.

What about the shares that are not redeemed? Do these reflect instances where early stage SPAC investors express confidence in the sponsor's deal by holding their shares through the merger and thereafter? If so, then characterization of SPACs as analogous to private equity would not be entirely off the mark. It would be private equity with an exit option.

To investigate this, we examine the extent to which 13F shareholders that hold shares immediately prior to the merger announcement continue to hold after the merger?<sup>44</sup> To quantify this, we define a "divestment rate," analogous to the redemption rates discussed above. Divestment may have occurred as a result of redemption or sale on the market. If, for instance, a given 13F investor reports holding 100,000 SPAC shares immediately prior to the merger announcement, and it holds 50,000 shares immediately after the merger, then that investor will have a 50% divestment rate.<sup>45</sup> We aggregate this to a SPAC-level calculation as well. Thus, a SPAC with a 75% divestment rate means that 75% of the shares outstanding prior to the SPAC's merger announcement were either redeemed or sold to new investors who made their decisions to buy only after the prospective target was announced.

Figure 7 plots the distribution of these divestment rates for the SPACs in our two cohorts. The mean and median SPAC retention ratios among the 2015 cohort is 93% and 97%,

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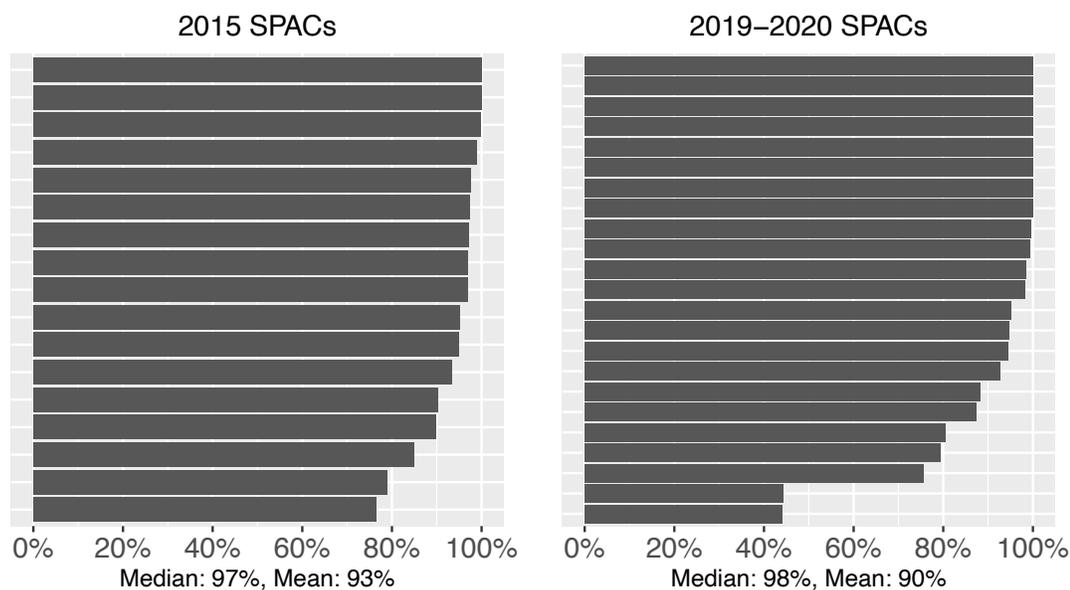
<sup>44</sup> For shareholdings after the merger, we look to the first 13F filings made after the merger is completed. For shareholdings before the merger, we look at 13F filings six months before the acquisition, but the results of these computations are very similar regardless of which pre-merger 13F filings we use, including those immediately following the SPAC IPO.

<sup>45</sup> Technically speaking, 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.

respectively. In other words, among those SPACs, pre-merger shareholders in the aggregate divest themselves of more than 90% of their shares between the time a merger is announced and shortly after the merger closes. This pattern is similar in our 2019-20 cohort, where the mean and median divestment rates are 90% and 98%, respectively.<sup>46</sup> For the “SPAC Mafia,” divestment rates are even higher, with mean of 94% and 97% for the 2015 and 2019-20 cohorts, and median divestment rates of 97% and 100% for the 2015 and 2019-20 cohorts.

Even where redemptions are quite low, divestment rates still indicate that very few shareholders from prior to the merger announcement hold until after the merger’s completion. For instance, among the SPACs from the 2015 cohort that saw 30% or fewer redemptions, the average divestment rate was still 87%. For those in the 2019-2020 cohort that saw 30% or fewer redemptions, the average divestment rate was 85%.

*Figure 7: SPAC 13F Divestment Rates*



This pattern of investment by 13F filers in general and the SPAC Mafia in particular is consistent with our Rube Goldberg description of SPACs. The primary role that investors in a SPAC’s IPO play is to get the SPAC up and running. Those shareholders and any that buy shares from them on the secondary market before the merger are well compensated for this role; they

<sup>46</sup> [At this point, 13F data is available only through 2019. We will update for 2020 mergers as additional 13F filings are made public.]

receive an above-market interest rate plus warrants and sometimes rights to boot. But, in a large majority of cases, when it comes time for SPACs to perform their sole function of bringing a private company public, pre-merger shareholders exit, either by exercising their redemption option or selling into the market. Other investors of course buy those shares, but once a merger has been announced, those investors are investing in the target company, just as any investor would invest in any other public company. The “private equity” element is no longer present.

## B. SPAC Terms and Transaction Costs

In combination with the right to redeem SPAC shares, the following features of SPACs create transaction costs that overhang its eventual merger in the form of diluted SPAC shares: (a) the sponsor’s 20% “promote,” (b) underwriting fees, and (c) publicly issued warrants and rights. All of these sources of dilution originate at the time of the IPO, but all are subject to adjustment at the time of the merger. In this section, we provide data on how these features of SPACs evolve from IPO to merger in our two cohorts of SPACs, and ultimately what they amount to in terms of a cost overhang at the time of the merger.

We measure the eventual cost of each of these features in two ways: as a percentage of pre-merger SPAC equity; and as a percentage of post-merger equity. The first figure is analogous to the underwriting fee in an IPO. When a target enters into a merger with a SPAC, it bears these transaction costs just as a company raising equity in an IPO bears the cost of the underwriting fee. The second figure represents the transaction cost in relation to the value of the merger. Assuming SPAC shareholders and target shareholders are reasonably well informed and behave rationally, they will enter into a merger only if the surplus of a deal is large enough cover the transaction costs. That surplus may stem from the value to the target of going public, the uses to which it can put the cash it will receive, and/or the value that the SPAC’s sponsor and management will bring to the post-merger company through continued engagement. Although the surplus is not observable, the size of the transaction costs relative to the deal value provides some basis on which to make a judgment whether the deal was likely worth its transaction costs. A large transaction cost dampens the value of a small transaction more than it would a large transaction.

### 1. The Sponsor’s Promote

In all SPACs across our two cohorts, the sponsor begins with 20% of post-IPO shares, which it acquires at a nominal cost. In addition, the sponsor makes a cash investment concurrently with the IPO. The sponsor's investment may be for shares, warrants or both. At the time of the merger, however, the sponsor's shareholding is often up for negotiation. If a private placement is made, the investor may negotiate a side payment from the sponsor in the form of shares or warrants. In addition, a large existing SPAC shareholder may negotiate a side payment in exchange for a commitment not to redeem its shares. Target shareholders may negotiate a side-payment of shares from the sponsor as well. Yet another possibility is that one or more of these parties will negotiate the cancellation of sponsor shares, which would transfer value to all post-merger shareholders. We define the sponsor's "net promote" as its initial 20% minus shares the sponsor transfers or cancels at the time of the merger. If the sponsor transfers or cancels warrants rather than shares, we treat them as 1/20 of a share, which reflects the typical trading value of warrants relative to shares at the time of a merger.<sup>47</sup>

In Table 1, we show the sponsor's net promote as a percentage of pre-merger and post-merger equity. As explained above with respect to transaction costs generally, the former percentage can be conceptualized as the cost to the target of obtaining the funds and other benefits that the SPAC will provide. It is analogous to the underwriting fee in a traditional IPO. This, conceptualization, however, ignores the fact that the target may well shift some or all of these costs to the SPAC shareholders. The mean and median figures of 28% and 23%, expressed in relation to the SPAC's pre-merger value, are far, far above the typical underwriting fees of 3-8% of funds raised in traditional IPOs.<sup>48</sup> For purposes of considering the extent to which the net

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<sup>47</sup> Another option would be to price these warrants according to market terms at the time they are transferred or cancelled. For instance, Trinity Merger Corp saw its warrant prices rise to roughly \$1.75 each shortly before its merger closed, following a pre-merger share price increase to roughly \$12.00 each. In theory, then, one could use this to value the roughly seven million warrants cancelled or transferred by Trinity's sponsor at that point. If one follows this line of reasoning, however, it would require also using the market price to value securities the sponsor retains. In events where share prices increase prior to merger closing, this would result in some very extreme accountings of SPAC transaction costs. Such an accounting of costs would be conceptually similar to notions that any amount of IPO "pop" (first-day positive return on IPO shares) counts as a transaction cost for a traditional IPO (though to fully mirror the "pop" transaction cost accounting, one would also add in any difference in value between SPAC share prices and redemption prices at time of merger closing, and compute this for all shareholders, not just the sponsor). While we do not consider such an accounting of costs to be completely unreasonable, for the sake of being conservative in estimating SPAC transaction costs, we do not pursue this route, and instead just value warrants transferred or cancelled at 1/20 share each, roughly their market value at the time of SPAC IPOs.

<sup>48</sup> Thus, while it is relatively common for the sponsor to voluntarily reduce its total holdings, frequently in response to high levels of redemptions, the reductions in sponsor holdings, and thus the value the sponsor receives, almost never tracks directly total redemptions linearly. As such, a company going public via SPAC will generally be

promote imposes a burden on a merger, however, the mean and median of 8.8% and 7% of total deal value is more informative.

*Table 1: The Sponsor's Promote*

	Mean	Median	25th Percentile	75th Percentile
<b>2015 SPACs</b>				
TO BE INSERTED LATER, ONCE CALCULATIONS ARE COMPLETE				
<b>2019-2020 SPACs</b>				
Promote as % IPO Proceeds	20%	20%	20%	20%
Net Promote as % IPO Proceeds	16.5%	18.5%	14%	20%
Net Promote as % Pre-Merger Equity	27.6%	23%	12%	38%
Net Promote as % Post-Merger Equity	8.8%	7%	4%	12%

## 2. Underwriting Fees

Underwriting fees are the next transaction cost for a SPAC. Like the 20% promote, the fees themselves are fairly standardized. The typical fee totals 5.5% of IPO proceeds, with 2% paid at the time of the IPO and 3.5% deferred until a merger closes. This fee appears to be similar to underwriting fees in traditional IPOs. But if one considers these fees as the cost of financing a target company, one must take account of redemptions—that is, IPO proceeds that are given back. SPAC underwriters are paid for shares that are later redeemed and never invested in a company going public. If one measures underwriting fees based on shares that are not redeemed shares, and that are therefore invested in a target company, they look quite different.

In Table 2, we show the underwriting fee, first scaled by IPO proceeds, as an underwriting fee is typically measured. We then show the fee as a percentage of IPO shares that are not redeemed. We then show the fee scaled by pre-merger SPAC equity, which adds the

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susceptible to wildly uncertain costs as a percentage of money raised, with this uncertainty resolved only at the time the final redemption amounts are known, shortly before the merger closes.

investment that the sponsor and third parties make at the time of the merger, and scaled by post-merger equity. Underwriting fees per unredeemed share are very high. When 99% of shares are redeemed and fees had been 5.5% of IPO proceeds, the ratio of the fee to the remaining 1% of shares is 550%. The mean fee shown in Table 2 reflects several SPACs with redemptions well over 98% and three over 99.5%. But the median of 24% for the 2019-20 cohort is far higher than underwriting fees in traditional IPOs of comparable size, which range from 3% to 8%.<sup>49</sup>

*Table 2: Underwriting Fees*

	Mean	Median	25th Percentile	75th Percentile
<b>2015 SPACs</b>				
UW Fee as % IPO Proceeds	5.1%	5.5%	4%	6%
UW Fee as % Non-Redeemed Share Proceeds	30.8%	12.6%	10%	19%
UW Fee as % Money Delivered in Merger	11.2%	6.6%	6%	15%
UW Fee as % Post-Merger Equity	2.2%	1.6%	1%	3%
<b>2019-2020 SPACs</b>				
UW Fee as % IPO Proceeds	5.4%	5.5%	5%	6%
UW Fee as % Non-Redeemed Share Proceeds	402.1%	24.2%	7%	98%
UW Fee as % Money Delivered in Merger	7.7%	7.2%	4%	10%
UW Fee as % Post-Merger Equity	2.4%	2.3%	1%	3%

### 3. Publicly Issued Warrants and Rights

Warrants and rights are the third feature of SPACs that create an overhang of transaction costs on a merger. Table 3 presents information on the warrants and rights that accompany SPAC units for our two cohorts.<sup>50</sup> Focusing on the first two rows of Table 3, we see a modest increase in average warrants per unit, moving from 0.52 warrants per unit for the 2015 cohort to

<sup>49</sup> Price Waterhouse Coopers, <https://www.pwc.com/us/en/services/deals/library/cost-of-an-ipo.html#:~:text=Underwriting%20makes%20up%20the%20largest,directly%20attributable%20to%20the%20IPO>

<sup>50</sup> We do not include in these computations warrants or rights purchased by SPAC sponsors at the time of the SPAC IPO. The proceeds of these sales are used to fund SPAC IPO underwriting and other costs. Presuming, as we do, that these sales of warrants and rights to SPAC sponsors are on largely fair terms, we have the choice of either counting as a SPAC expense the money that leaves the SPAC to pay the underwriter, or the warrants that leave the SPAC to raise that money (by selling to the SPAC sponsor). Counting both, however, would result in double-counting SPAC expenses. It would be akin to a company that funds itself only with equity, and computing its expenses as both the money it pays to acquire equipment, and the value of shares the company sold to raise that money.

0.66 warrants per unit for the 2019-20 SPAC cohorts. Rights per unit likewise increase, moving from 0.03 per unit to 0.04 per unit between the two cohorts. This is surprising in light of press stories touting high profile SPACs with one-third or even one-quarter of a warrant per unit, which our data confirm.<sup>51</sup> It is the lower profile SPACs that tend to have more warrants and rights. Warrants and rights, as discussed above, compensate IPO investors for investing in an instrument that will hold cash for two years, so perhaps the recent growth of SPACs coupled with the fact that SPAC investors tend to come from a specific clientele—the SPAC mafia—has created price pressure on SPACs.<sup>52</sup>

Table 3 next contextualizes these costs from a variety of perspectives. As we discuss in Part II above, warrants and rights associated with shares that are redeemed are a vestigial claim on the SPAC for which no consideration remains in the SPAC’s trust. Rights typically provide a holder to acquire 1/10 of share at the time of a merger with no exercise price. Their value, and hence the cost they impose on a SPAC and the post-merger company is \$1 per right.<sup>53</sup> Warrants cannot be valued in as straightforward a manner, so we rely on their trading price, which in general is \$0.50 per warrant. We thus measure the dollar value of warrants and rights associated with redeemed shares as \$1 times the number of rights associated with redeemed shares plus \$0.50 times the number of warrants associated with redeemed shares. In the third line of Table 3, we again show this figure as a percentage of the cash the SPAC provides to the post-merger company—including the post-redemption value of the trust and cash invested by the sponsor and third parties in private placements. We thus compute the third line in in Table 3, as follows:

$$\begin{aligned} & \textit{Total Cost of Redeeming Warrants and Rights :} \\ & = \frac{\textit{Total Value of Warrants + Rights of Redeeming Shares}}{\textit{Total \$ SPAC Delivers in Merger Transaction}} \end{aligned}$$

The ratio thus represents the costs associated with warrants and rights as a percent of total money the SPAC delivers to the company it brings public.

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<sup>51</sup> See, e.g. <https://www.barrons.com/articles/it-has-been-a-huge-week-for-spac-ipos-51594999392>

<sup>52</sup> SPACs with more prominent sponsors are frequently able to offer units with fewer numbers of warrants and units. Thus, shifts in average numbers of warrants and units per share can reflect a complex mix of changing composition of SPAC sponsors, market interest rates, and supply of SPAC Mafia and other IPO-stage SPAC funding.

<sup>53</sup> A few SPACs give unit purchasers rights for different numbers of shares, such as 1/7 share per unit. In this case, we value the rights as 1/7 of the value of a share, or \$1.41. A mean rights per unit figure such as 0.04 in Table 3, for instance, means an average rights value of \$0.40 per unit.

For the 2015 cohort, mean and medians of this cost ratio are 8.7% and 4.7%. In other words, the cost associated with warrants and rights of redeeming shareholders are in and of themselves comparable with underwriting fees of traditional IPOs. Mean figures for the 2019-20 cohort are even higher, but they are influenced by a number of SPACs that had exceptionally high redemptions. Median costs for the 2019-20 cohort drop to 3%, potentially indicating some degree of improvement on this front. Because warrants and rights create such high costs in SPACs with high, we also present separately in Table 3 figures computed for each cohort among SPACs that had less than 90% redemption.<sup>54</sup>

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<sup>54</sup> In a few instances, making these exclusions actually raises the mean costs. This is because at least some SPACs with very high redemptions also had very large PIPE and SPAC sponsor contributions, which helped to bring total costs associated with warrants and rights down, at least as a percent of total money delivered by the SPAC.

Table 3: Transaction Costs from SPAC Warrants and Rights

	Mean	Median	25th Percentile	75th Percentile
<b>2015 SPACs</b>				
Warrant Shares per Unit	0.52	0.5	0.5	0.5
Rights Shares per Unit	0.03	0	0	0
Total Cost of Redeeming Warrants+Rights	8.7%	4.7%	0.8%	10.8%
Total Cost of All Warrants+Rights	12.2%	6.4%	2.7%	15.3%
Total Cost of Redeeming Warrants+Rights (exclude redemptions > 90%)	9.3%	3.4%	0.5%	11.3%
Total Cost of All Warrants+Rights (exclude redemptions > 90%)	13.5%	5.1%	2.6%	15.6%
<b>2019-2020 SPACs</b>				
Warrant Shares per Unit	0.66	0.5	0.5	1
Rights Shares per Unit	0.04	0	0	0.1
Total Cost of Redeeming Warrants+Rights	46.3%	3%	0.4%	72.3%
Total Cost of All Warrants+Rights	49.8%	5.8%	2.5%	83.7%
Total Cost of Redeeming Warrants+Rights (exclude redemptions > 90%)	14.3%	1.1%	0.1%	3.4%
Total Cost of All Warrants+Rights (exclude redemptions > 90%)	18.6%	3.9%	2.1%	6.2%

#### 4. The Bottom Line—Transaction Cost for SPAC Mergers

If we sum these three costs—the sponsor’s promote, the underwriting fee and the warrants and rights—for each SPAC, median total transaction cost for the 2019-20 cohort is 38.5% of money raised. [stats for 2015 cohort to be added later, once sponsor net promote calculations are computed.]. This dwarfs the cost of a typical IPO. The mean is even higher, at 85% of money raised and the 75<sup>th</sup> percentile cost is 132%. In other words, in over a quarter of SPACs, the combination of underwriters, the redeeming shareholders (who benefit from warrants and rights), and the SPAC sponsor capture more total value than is delivered to the company

going public. The best case in favor of SPACs can probably be made by considering the lowest ranges of the distribution. The 25<sup>th</sup> percentile total transaction cost is only 22% of money delivered in SPAC merger transactions, and the 10<sup>th</sup> percentile is a mere 14%. On the one hand, this is still two to three times the typical cost of IPO underwriting. On the other hand, where a sponsor and its executives running the SPAC are highly skilled and experienced and are expected to remain involved with the post-merger company, their expertise and connections may be a source of substantial value. This is the claim of some of the high profile sponsors.<sup>55</sup>

Overall, the discussion above highlights three salient aspects of the cost of dilution that occurs as a result of the SPAC structure. First, SPAC costs are very high. Second, they are highly variable. Third, a large amount of this variability depends on the number of redemptions, something that is not known until just before the merger closes.

### C. Post-Merger Performance

In this Section we investigate the returns to shareholders that chose not to redeem their shares, and the returns to sponsors. The costs resulting from the SPAC structure and the misaligned incentives that we have analyzed theoretically in Section II.B and empirically in Section III.B have two empirical implications. First, the dilution baked into a SPAC overhang its eventual merger. Consequently, a sponsor will have to identify a very attractive target with which to merge if all parties are to come out ahead. If, for example, the sum of the sponsor's promote, the underwriter's fee, and the cost of the warrants held by redeeming shareholders come to, say, \$30 million, there will need to be \$30 million of surplus value created by the SPAC's merger with a target. Otherwise, either the SPAC shareholders or the target shareholders will lose out on the deal. If one makes the unrealistic assumption that both sets of shareholders are fully informed, one or the other would reject a deal unless it promises at least that much surplus.

But there is always uncertainty regarding the value of a company going public, and that uncertainty is apparently greater with respect to many SPAC targets than companies going public in traditional IPOs. SPAC sponsors have more information about a target than do SPAC shareholders, so shareholders may well rely on their judgment. On the other hand, sponsors' incentives are partially misaligned with shareholder interests, so there is presumably a limit to

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<sup>55</sup> See TPG website, Pershing Square prospectus, and others

their shareholders' deference. On balance, it would not be surprising to see some SPACs entering into mergers that are not value-increasing net of transaction costs. It would also not be surprising to see at least some overpayment by SPACs, which would manifest itself in negative post-merger returns to SPAC shareholders. On the other hand, there may well be some SPAC sponsors that have the skills to identify and negotiate good deals for SPAC shareholders (and themselves) and to promote the profitability of these companies following a merger.

In analyzing SPAC returns below, we cannot draw a causal connection between the transaction costs and misaligned incentives we have identified above and performance. There are too few SPACs, and their terms are too uniform. We present these data, therefore, only as suggestive evidence to either confirm or reject the concerns that the forgoing analysis has raised.

We continue to analyze our two cohorts of SPACs. While the 2015 cohort has had at least two years of post-merger performance, the SPACs that merged in 2019 and 2020 have had at most one year of performance and most have had far less. In response to claims in the business press that current SPACs are different from their predecessors, we nonetheless draw comparisons across the 2015 and 2019-20 cohorts to the extent we can. We also use the data to the extent we can to explore the possibility that these stories reflect performance of a select group of SPACs sponsored by particularly skilled and experienced sponsors and CEOs.

#### 1. Failed SPACs

Our analysis of transaction costs embedded in SPACs imply that we will see a substantial number of failed SPACs. The primary form of failure is a failure to merge, which results in a liquidation. Another outcome that can reasonably be defined as failure is a merger with very little cash remaining in the SPAC—due to high redemptions and an inability of the sponsor to attract new funds. We have no a priori way of determining, however, what number of failed SPACs would support our theoretical prediction that high transaction costs result in failed SPACs.

Among the 20 SPACs that went public in 2015, 15% (three SPACs) were liquidated. During the period from the beginning of 2019 until June 2020, there were 47 SPAC acquisitions and 6 SPAC liquidations, for a liquidation rate of 11%. Among the SPACs that merged in 2019 and 2020, however, three had pre-merger equity of less than 5% of their IPO proceeds, due to extremely high redemption rates and no funds raised at the time of the merger.<sup>56</sup> If these are

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<sup>56</sup> In these instances, the deal becomes essentially a direct listing accompanied by a private placement.

counted as “failures,” then they bring the rate of liquidated or failed SPACs to 16% for the 2019-20 cohort.<sup>57</sup> By contrast, among the 2015 cohort, the SPAC with lowest pre-merger equity as a percent of IPO proceeds was 16%.

## 2. Shareholder Returns

One explanation for what appears to be a low number of failed SPACs is that sponsors succeeded in identifying high-surplus mergers. The other explanation is that either targets or SPAC shareholders accepted deals that produced surplus less than the dilution-related costs we have identified. We shed some, but not conclusive, light on this question by analyzing post-merger returns to SPAC shareholders. To the extent those returns were poor, one reasonable inference is that sponsors, consistent with their incentives, entered into deals without adequate surplus by overpaying target shareholders.

We analyze performance from the perspective of a SPAC shareholder that chose not to redeem its shares when a merger was proposed. We thus begin by computing returns for a given SPAC at time  $t$  as:

$$Return_t := \frac{\text{Adjusted Price}_t}{\text{Redeem Amount}} - 1$$

Adjusted Price $_t$  is the price of the SPAC’s common shares at time  $t$ , adjusted for any stock splits or dividend payments. Redeem Amount is the amount the investor would have received by redeeming its shares.<sup>58</sup>

### a. The 2015 Cohort

Table 4 presents one- and two-year returns for the SPACs that went public in 2015. Over a one-year post-merger interval, SPACs on average lost 15.6% of their value, and over a two-year interval they lost 36.9% of their value. Median performance was negative 30.5% after one year and negative 52.2% after two years. Performance compared to various benchmarks is even

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<sup>57</sup> In general, the later cohort may exhibit more SPACs that previously would have failed, nevertheless going forward with transactions, yet bringing very little equity. For instance, 9 of the 47 SPACs in the 2019-20 cohort (20% of total) merged with 16% or less of their post-IPO equity remaining, compared to just one such SPAC for the 2015 cohort.

<sup>58</sup> This amount is usually slightly above the offering price for SPAC units. An alternative would be to instead use this offering price in return calculations. As a practical matter, the distinction has no meaningful impact on the conclusion of any of our analyses.

worse. Comparing SPAC performance to Renaissance Capital’s IPO Index,<sup>59</sup> which tracks performance of companies that recently went public via traditional IPOs, 2015 SPACs on average underperformed against traditional IPOs by 30.7% and 60.6% over one- and two-year intervals. Median performance was even worse. Performance is similarly poor, though slightly less so, when compared against the Russell 2000.<sup>60</sup>

Table 4: Summary of SPAC Returns – 2015 Cohort

This table presents perspectives on the returns to SPAC shareholders that held their shares through the SPAC merger, as opposed to redeeming them.

	1-Year Post-Acquisition	2-Years Post-Acquisition
Mean Return	-15.6%	-36.9%
Median Return	-30.5%	-52.2%
Mean Return (Excess over IPO Index)	-30.7%	-60.6%
Median Return (Excess over IPO Index)	-34.2%	-80.1%
Mean Return (Excess over Russell 2000)	-24.6%	-43.8%
Median Return (Excess over Russell 2000)	-33.9%	-56.6%

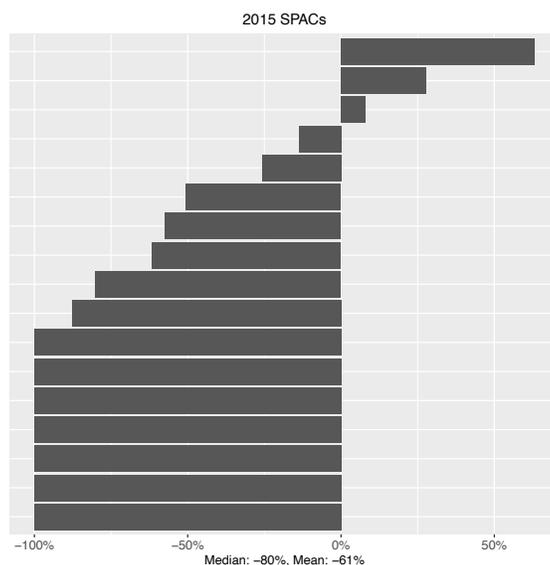
While SPAC performance among this cohort overwhelmingly poor, a small number of SPACs did quite well. Figure 8 presents post-merger returns with and without an adjustment for market return for each SPAC. The best SPAC’s market-adjusted returns were over 50%, but the worst nine SPACs lost over 90% of their value.<sup>61</sup>

<sup>59</sup> The index follows companies for two years post-IPO, closely analogous to the two-years of post-SPAC-acquisition performance we present in Table 4. For more information on the index, see <https://www.renaissancecapital.com/IPO-Investing/US-IPO-ETF>

<sup>60</sup> The Russell 2000 is similar to the Russell 3000, which tracks performance of the largest 3000 US public companies. But, the Russell 2000 excludes the top 1000 largest companies. Thus, it focuses on small and mid-sized firms, which have market capitalizations similar to most post-acquisition SPACs.

<sup>61</sup> Figure 8 documents 9 SPACs (in other words, 26% of the 34 in our sample that made acquisitions) with excess returns of -100%. In some of these instances, the SPACs actually declared bankruptcy. More often, the shares became delisted from exchanges and now trade very occasionally over the counter for a few pennies each. If a SPAC lost all or essentially all of its value during a period in which the market gained value, then technically its “excess returns” could be below -100%. For convenience of presentation, we have truncated these returns at -100% in Figure 8 and Figure 9.

Figure 8: Individual SPAC Two-Year Returns (Excess over IPO Index) – 2015 SPACs



b. The 2019-20 Cohort

Computing returns for the 2019-20 cohort and comparing them to those of the 2015 cohort is challenging because there are different periods of time available to observe returns. None of the SPACs in this cohort yet have two full years of price return data, and only about half have a full year of data. In our analyses, therefore, we examine the performance of SPACs 3-months post-acquisition. Nearly all of the SPACs in the 2019-20 cohort have at least this much history. For the small number that do not, we compute performance as of the most recently available date. We include data over comparable periods for the 2015 cohort as well.

Table 5: Three-Month Post-Acquisition SPAC Returns

	2015 SPACs	2019-20 SPACs
Mean Return	-4.7%	-3.3%
Median Return	-3.9%	-15.8%
Mean Return (Excess over IPO Index)	-11.1%	-12.4%
Median Return (Excess over IPO Index)	-8.2%	-17.7%
Mean Return (Excess over Russell 2000)	-7.7%	-2.3%
Median Return (Excess over Russell 2000)	-4.4%	-9.1%

Figure 9: Individual SPAC Three-Month Returns (Excess over IPO Index)

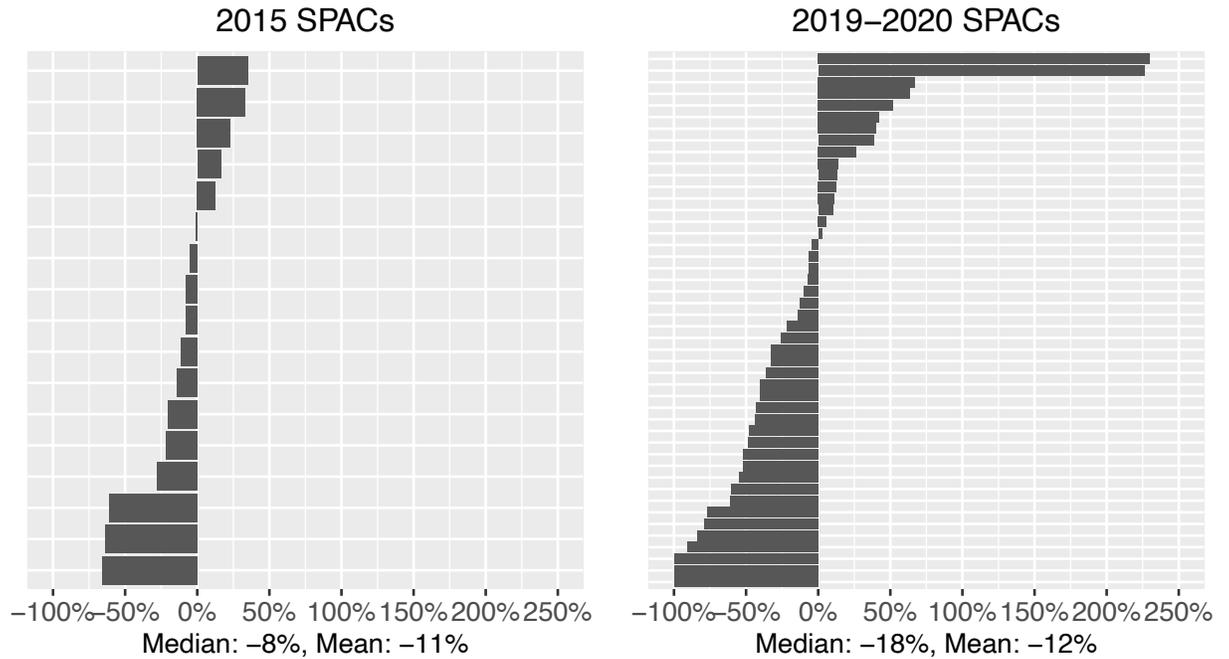


Table 5 presents the returns as of three-months post-acquisition for both the 2019-20 cohort and the 2015 cohort. Overall, average performance is comparably poor between the two groups. Results are similar when we compare six-month and one-year performance for the set of 2019-20 SPACs that have this much performance history available.<sup>62</sup> These rather poor results for the most recent cohort of SPACs, may come as a surprise to those who follow the accounts of SPACs in the popular press and among publications aimed at legal and financial practitioners. And, indeed, a number of SPACs that have recently made acquisitions are seeing very strong price-performance. These include prominent examples such as the SPACs that acquired Virgin Galactic, currently trading at \$19 / share, and Nikola Corporation, currently trading at \$36 / share, both up substantially from the roughly \$10 / share investors passed up by choosing not to redeem.

How can the returns overall for recent SPACs be squared with this popular understanding? Figure 9 provides some insight. It presents the three-month returns for each

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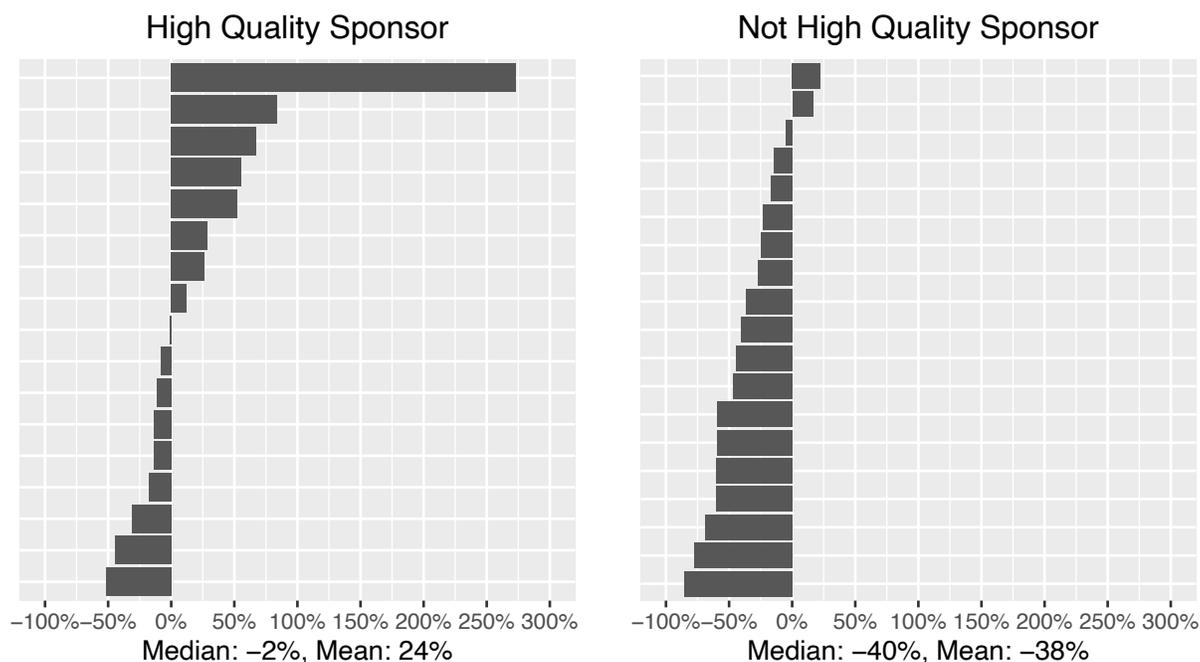
<sup>62</sup> For instance, 40 of the 47 SPACs in the 2019-20 cohort have at least six-months of post-acquisition data. For these, the mean return is -11%, compared to -4.6% for the six-month return of the 2015 SPACs. Returns in excess of the IPO and Russell indices are similar. For one-year returns, only 13 of the 47 SPACs in the 2019-20 cohort have data available. For these, the mean return is -30%, compared to -15.6% for the six-month return of the 2015 SPACs.

individual SPAC in both the 2015 and 2019-20 SPAC cohorts. While there is significant dispersion of returns in the 2015 cohort, the dispersion is far greater in the 2019-20 cohort. While the majority of recent SPACs have under-performed comparable IPOs, five outperformed IPOs by 50% or more in just three months, and two outperformed by 200% or more.

It is possible that with sufficient skill and experience, a sponsor can overcome the structural disadvantages of SPACs and outperform the majority of SPACs. As a proxy for sponsor quality, we identify SPACs with any of the following features: a CEO who is an ex-CEO of a Fortune 500 company; sponsors affiliated with a fund listed on Pitchbook with at least \$1b in assets under management; sponsors that have previously run another SPAC. These “high quality” SPACs in the 2019-20 cohort on average have outperformed the IPO index by 20 percentage points over their first three months post-acquisition – far better than the negative 12% excess return for SPACs in the 2019-20 cohort on average. Figure 10 plots the dispersion of three-month returns (excess of the IPO index) for sponsors defined as high quality and for others in the 2019-20 SPAC cohort.

These results provide some support for the notion that more highly skilled sponsors can deliver better post-acquisition price performance. At the same time, the relatively small sample and the short time period warrants caution in drawing any inferences. For instance, although we have not comprehensively evaluated sponsor quality outside of the 2019-20 cohort, there have been many spectacular failures by sponsors that would have been identified by our metrics as “high quality,” including for instance Silver Run II, the largest SPAC to make an acquisition to date, with over \$1 billion raised in its initial IPO. Silver Run II was the second SPAC affiliated with Riverstone Holdings, a private equity firm with \$40 billion assets under managements, yet the firm acquired by Silver Run (in 2018) spiraled into bankruptcy and saw share prices go to zero within 18 months post-acquisition.

Figure 10: Three-Month Excess Returns (over IPO Index) by Sponsor Quality: 2019-20 SPACs



A final question one might ask is Who were the shareholders that bore the losses in share value that most post-merger companies experienced? As we explained in Section III.A, among nearly all SPACs, almost all holders of shares from the time of the IPO up to the merger exited by redeeming or selling their shares. For the shares that were sold, of course, there were buyers. Data availability limit our ability to answer that question. From before the merger until after the merger 13F investors tend to decline. This is presumably due to the fact that many target shareholders are not 13F filers. But the absolute numbers of shares owned by 13F filers stay relatively constant from pre-acquisition to immediately post-acquisition.<sup>63</sup> This suggests that pre-merger 13F filers were replaced by other 13F filers, as opposed to unsophisticated retail investors. Among the 13F filers, the top five holders post-acquisition are Fidelity Investments, Vanguard Group, Wellington Management Group, Blackrock, and T. Rowe Price.<sup>64</sup> Some of the holdings by these asset management companies are likely in their passive index funds that did not invest in SPACs based on fundamental analysis. But we cannot say how many. In any

<sup>63</sup> In other words, if a given SPAC had 10 million total shares owned by 13F filers prior to acquisition, on average it will retain about 10 million total shares owned by 13F filers post-acquisition.

<sup>64</sup> The next three largest holders are less well-known firms: Janus Henderson Group, Alyeska Investment Group, and Neuberger Berman Group.

case, these assets management companies' holdings account for a total of only 14% of total 13F post-acquisition holdings.

c. Return to Sponsors

Finally, we consider returns to SPAC sponsors. Overall, the results above show that SPACs delivered at best a very mixed bag, with far more big losses than big wins, to their public shareholders. The picture for SPAC sponsors is, however, very different.

Suppose that a SPAC raises \$300 million in an IPO. A sponsor will typically contribute roughly 3.5% of the money raised to cover SPAC underwriting fees, to subsidize the trust to ensure above-treasury returns to redeeming investors, and to cover the SPACs expenses. For a \$300 million SPAC IPO, this translates to a \$10.5 million contribution on the part of the sponsor. In the simplest scenario, the sponsor will own 20% of the SPAC's \$300 million investment in a target, for a value of \$60 million. As long as this \$60 million stake doesn't fall below the \$10.5 million up-front sponsor investment—in other words, as long as the post-acquisition share price drops by less than about 80%—the SPAC sponsor will still come out ahead.

To compute returns to SPAC sponsors, we begin by taking the sum of investments the sponsor makes at the time of the SPAC IPO and at the time of the merger. We call this the “Sponsor’s Total Investment.” We next identify the total number of shares and warrants that the sponsor holds as of the time of the merger. This accounts for any cancellations or transfers the sponsor makes at the time of the merger, as well as for any new securities the sponsor purchases. At particular points following the merger, we determine the value of the sponsor’s investment, which we call this “Sponsor’s Asset Value.” We thus compute:

$$Sponsor\ Return_t := \frac{Sponsor\ Asset\ Value_t}{Sponsor\ Total\ Investment} - 1$$

As with reporting returns to non-redeeming shareholders, we focus on returns to sponsors three-months post acquisition in order to have coverage for nearly all of the SPACs in our most recent cohort. Sponsor securities are generally subject to lockup agreements through the first year following acquisition. Thus, we assume that sponsors will retain their holdings during this

period.<sup>65</sup> Figure 11 summarizes returns to SPAC sponsors for the two cohorts we study. The most successful SPACs in each cohort saw sponsor returns of over 1000% (i.e. sponsors recoup 10x their investments) or more. Mean sponsor returns for both cohorts are in excess of 400%. For four SPACs in the 2015 cohort, and 11 in the 2019 cohort, public shareholders had already lost 40% or more of their investments by three months post-acquisition. Yet, even among these poorly performing SPACs, average sponsor returns at this point were positive 300% for the 2015 cohort and positive 60% for the 2019-20 cohort. Results are very similar for those SPACs that have six and twelve months of post-acquisition history.<sup>66</sup> Figure 12 for instance presents sponsor returns 12-months post-acquisition, though with the caveat that it is only a limited number of SPACs with this length of history in the 2019-20 cohort.

As of three-months post-acquisition, every sponsor in the 2015 cohort had substantially positive returns. Yet, for the 2019-20 cohort, there were four sponsors (out of 36 SPACs in the cohort) that had negative returns by the three-month mark. The returns to these sponsors that lost money range from -8% to -53%. With SPACs structured so favorably to SPAC sponsors, how is it that these sponsors could possibly lose money on their deals? In every case, it is because the sponsors made large additional investments at the time of the merger—apparently, investing good money after bad. In two of these cases, the sponsors roughly tripled their total investment at the time of the merger. In the other two, the sponsors increased their investments by a factor of eight and a factor of twenty at the time of the merger. In each of these four cases, the sponsor would have come out well ahead had it maintained only its initial investment as of the time of the SPAC IPO.

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<sup>65</sup> As a practical matter, if a sponsor is no longer a control person in the post-merger company and is not itself a 13F filer (few sponsors are), then it is not possible to directly track sponsor security ownership post-acquisition. In instances where we are able to track sponsor security sales, we find that the above measure is an under-estimate of sponsor returns. The reason is that sponsor lock-up provisions frequently allow them to sell some shares if post-acquisition share prices rise above a certain threshold. There are a number of instances where this happens and sponsors sell a large portion of their holdings, and later on share prices markedly drop. Because we are only able to precisely track post-merger sponsor shareholdings for a small subset of SPACs, in the interests of consistency we make the simplifying assumption that sponsors hold their securities for a year post-acquisition for all SPACs.

<sup>66</sup> For six-months post-acquisition, mean sponsor returns for the 2015 cohort were 495% and 402% for the 2015 and 2019-20 cohorts, respectively. Every sponsor had significantly positive returns as of 6-months post-acquisition for the 2015 cohort, and all but three sponsors had significantly positive returns for the 2019-20 cohort. For twelve-months post-acquisition, mean returns were 449% and 311%, for the 2015 and 2019-20 cohorts, respectively. As of this time, one sponsor in the 2015 cohort was at essentially its break-even point, and all others had substantially positive returns. As of one-year post acquisition, one sponsor in the 2019-20 cohort had negative returns, and the others all had substantially positive results.

Figure 11: Returns to SPAC Sponsors – 3 Months Post-Acquisition

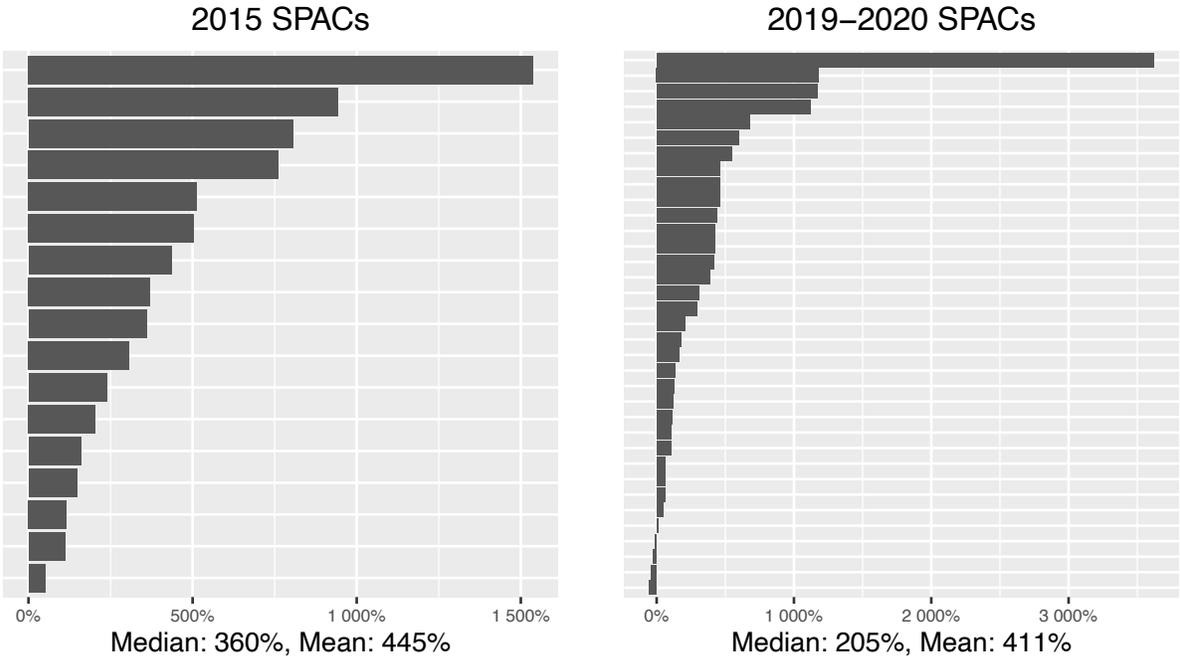
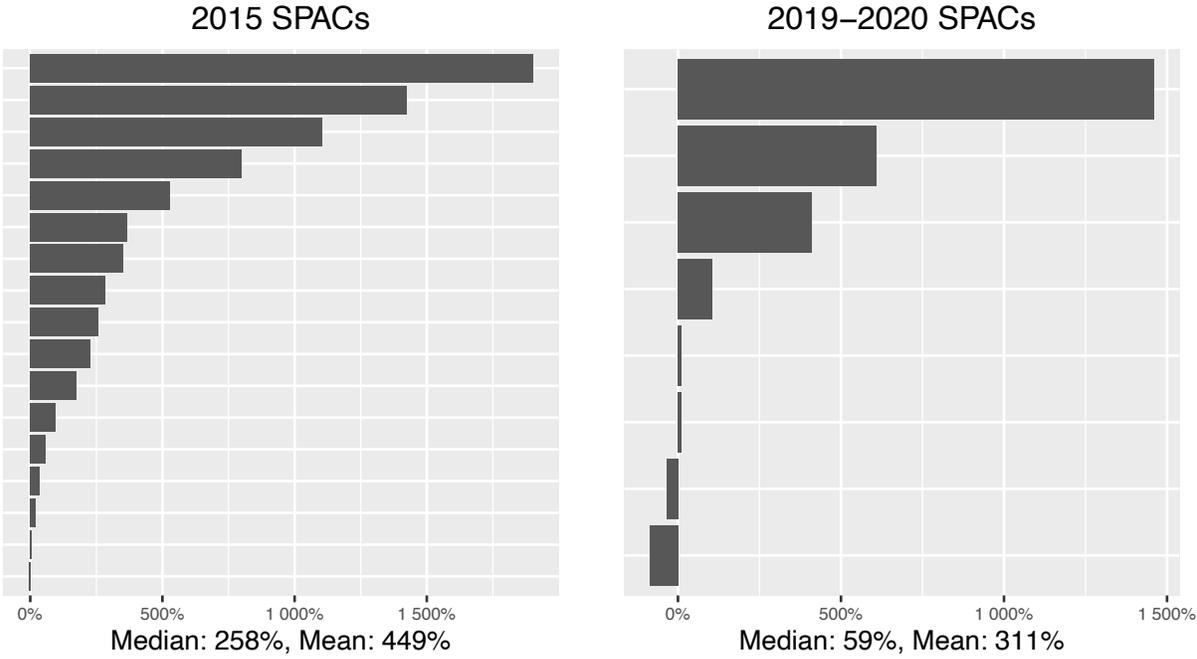


Figure 12: Returns to SPAC Sponsors - 12 Months Post-Acquisition



#### D. Summary of Empirical Findings

Our empirical analysis has addressed a wide range of questions. What have we learned? First, our description of the SPAC process as Rube Goldberg in nature is even more apt when one looks at SPACs empirically than when one looks solely at SPAC terms. Investors in an IPO and those that purchase on the secondary market prior to the merger essentially exit en masse either by sale or redemption. Second, dilution generated by the sponsor's promote, the underwriting fee, and the overhang of warrants and rights associated with redeemed shares average 85% of the cash provided to a target in mergers that occurred in 2019 and 2020. [2015 mergers to follow.] Finally, returns to SPAC shareholders in both 2015 mergers and 2019-20 mergers was quite poor. Although most of the 2019 and 2020 mergers have had only a few months of performance, we cannot conclude that their returns were any better on average than 2015 mergers. This is surprising in light of the descriptions of SPACs in the business press as "'booming,"<sup>67</sup> and "hotter than ever."<sup>68</sup> The disconnect may be that we look at all SPACs and the press looks at the "hot" ones. In fact, SPACs with highly experienced sponsors or CEOs achieved positive returns on average and some achieved very high returns. Sponsors' returns, including high and low-visibility sponsors—were nearly uniformly positive and on average very high.

#### IV. **Why Do SPACs Persist?**

The problematic structure of SPACs and their historically poor performance raise the question why SPACs persist. Indeed, why have successful private equity funds and experienced CEOs chosen SPACs as a means of bringing companies public over the past two years, rather than employing an alternative structure?

A partial answer to these questions is that SPACs fill a gap in the traditional IPO market. As discussed above, the classic SPAC's target faces uncertain prospects of going public through a traditional IPO. In the currently "hot" environment for SPACs, companies that could go public in a traditional IPO may well be considering SPAC mergers, but the classic SPAC target is unusual in some way that makes underwriters doubt it will be successfully priced

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<sup>67</sup> <https://www.barrons.com/articles/spacs-are-booming-these-21-may-be-about-to-announce-deals-51594029600>

<sup>68</sup> <https://www.fool.com/investing/2020/06/27/special-purpose-acquisition-companies-why-spacs-ar.aspx>

through the conventional roadshow and book-building process. The company may have an unusual business with too few comparables among public companies, it may face legal uncertainty, a complicated tax situation, or some other uncertainty or complexity that would make price discovery in the traditional underwriting process difficult. As we have explained, different companies likely choose SPACs to go public for different reasons. While we do not attempt to quantify the importance of each factor for each company, based on the literature on SPACs and interviews with people involved in the SPAC sector, we can enumerate many of the plausible factors. The traditional underwriting process apparently cannot adequately resolve the information asymmetry that exists between potential investors and companies in the SPAC target market. The SPAC process, on the other hand, apparently does address that asymmetry—at least enough to get deals done.

But why SPACs? Why do SPACs, with all their counterproductive features, fill the gap in the IPO market rather than a less problematic financial innovation? When one sees a structure as roundabout and problematic as a SPAC, the first inference is often that there are regulatory obstacles or biases that favor the roundabout route. We therefore begin below by investigating whether there are such biases that favor SPACs over either traditional IPOs. We then consider other benefits commonly attributed to SPACs in the business press.

#### A. Is There A Regulatory Preference for SPACs Over Traditional IPOs?

Is the persistence of SPACs explained by a regulatory advantage over IPOs in serving a particular market of firms seeking to go public? Perhaps, at least in part. Although not by design, the securities laws treat SPACs more leniently than traditional IPOs in two respects. This is because a company going public by merging with a SPAC is governed by the securities laws applicable to mergers rather than those applicable to public offerings. This has two important consequences. First, when a SPAC brings a company public, it may include financial projections and other forward-looking statements in its SEC filings and in communications with potential shareholders without concern about liability. As we describe below, a company going public in a traditional IPOs, in effect, cannot do that. Second, an underwriter in a traditional IPO faces liability for misstatements and omissions in the issuer's registration statement whereas, in a

SPAC, that risk is essentially nonexistent. This leniency toward SPACs is not deliberate; no policy decision was made to favor SPACs over IPOs. It is an inadvertent loophole.

The PSLRA provides a safe harbor for projections and other forward-looking statements so long as such statements are accompanied by appropriate cautionary language. The safe harbor protects issuers and others from liability for a misstatement or omission in certain SEC filings and relate public statements. The objective of the safe harbor is to encourage public companies to provide information to the market even where that information is subject to some uncertainty, as projections and other forward-looking statements inherently are.

The safe harbor covers proxy statements, annual reports, quarterly reports and other SEC filings. Importantly for the present context, however, it does not cover IPOs.<sup>69</sup> As a result, IPO prospectuses rarely include financial projections or other forward-looking statements.<sup>70</sup> While the bespeaks caution doctrine does provide some protections for IPO statements, its interpretation is more variable across circuits and in general appears to engender less comfort, particularly amongst underwriters and their counsel.

Because a company that goes public via a SPAC does so in merger transaction, which is disclosed and described in a proxy statement, the target and the SPAC can include projections in their joint proxy statement and when marketing their deal. For companies that face challenges bridging information asymmetries with potential investors, as SPAC targets reportedly do, the freedom to provide and explain projections is important. This regulatory advantage of SPACs is thus an attraction of SPACs over IPOs.

With respect to disclosure in general, IPOs are a flashpoint for securities class action lawsuits against both issuers and underwriters. Since 2015, approximately 15% of traditional IPOs have been the target of shareholder suits under Section 11 of the Securities Act of 1933. Of those, roughly 90% name the underwriter in addition to the issuer as a defendant.<sup>71</sup>

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<sup>69</sup> 15 U.S.C. §§ 77z-2, 78u-5

<sup>70</sup> For instance, Andrew Bary notes “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.” “Facebook IPO Forecasts Should Be for Everyone” in Barons, By Andrew Bary. May 22, 2012. David Martin & Frederick Knecht of Covington and Burling similarly note that “the SEC has deliberately avoided encouraging the use of financial projections in IPOs because of the potential inappropriateness of such information in that context,” and that “in most cases, companies and their legal counsel determine that the omission of ... projections from prospectuses is not material to investors.” The IPO Climate: In the Wake of Facebook, Are IPOs Really Broken? Wall Street Lawyer. August 2012, Vol 16, Issue 8.

<sup>71</sup> These data come from the Stanford Securities Litigation Analytics database. <https://sla.law.stanford.edu/>. Although underwriters are routinely indemnified by their clients, their protection is only as good as a client’s

Under Section 11, shareholders that purchase shares directly in a public offering or shares traceable to that public offering have standing to bring a suit against the issuer, its underwriter and its directors and officers for material misstatements and omissions in the registration statement filed for a public offering.<sup>72</sup> To simplify only slightly, damages assessed for a Section 11 violation are measured by the difference between the price at which shares are issued and the value of shares at the time of the lawsuit.<sup>73</sup>

An issuer of securities sold in a public offering is strictly liable under Sections 11, but the underwriter, officers and directors have a “due diligence” defense under which they avoid liability if they prove that they engaged in due diligence, and that the misstatement or omission occurred despite that due diligence. As a result, issuers and underwriters engage in painstaking due diligence in preparation for an IPO. Furthermore, the underwriting agreement for an IPO typically provides that the lawyer for the issuer and the lawyer for the underwriter will 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. Due diligence for an IPO is thus an expensive, time consuming process—as is the litigation that ensues despite issuers’ and underwriters’ efforts to protect themselves. Preparation for an IPO is universally described as a lengthy process. This is due, in no small part, to avoidance of liability under Sections 11.

In contrast, a SPAC, its officers and directors, and its underwriter are largely insulated from Section 11 liability. When a SPAC goes public, it has little to disclose and therefore little to misstate or omit.<sup>74</sup> It is simply collecting cash that will be put in trust until it either finds a merger target or liquidates. Furthermore, since SPAC shares are redeemable, they do not trade below their IPO price. Even if there were a misstatement, shareholders bear no loss and therefore could collect no damages. Not surprisingly, there have been no Section 11 suits against third generation SPACs based on their IPOs.

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financial ability to make good on its commitment. In addition, as repeat players in the public offering market, underwriters may have reputational concerns.

<sup>72</sup> Under Section 12, the same shareholders have standing to bring a suit based on misstatements and omissions outside the registration statement but related to the public offering.

<sup>73</sup> [add detail on the calculation]

<sup>74</sup> The SEC did challenge one second generation SPAC for failing to disclose that it had selected a target before its IPO. [we will search for others]. See the discussion of the SPAC International Shipping Enterprises presented in Special Purpose Acquisition Companies; SPAC and SPAN, or Blank Check Redux? (Daniel Riemer - Washington University Law Review - 2007).

When a SPAC merges, it registers and issues shares to the target's shareholders, so the SPAC and its officers and directors are potentially exposed to Section 11 litigation. Its underwriter, however, has no exposure at this stage because there is no underwriting in this transaction. But even the issuer, its officers and directors face little liability risk under Section 11 for the merger transaction. This is true for two reasons. First, to the extent target shareholders that receive shares are aware of the misstatement or omission, they have no standing to sue.<sup>75</sup> This, in all likelihood, will preclude target management and major target shareholders from bringing a suit. Second, after the shareholders of the target company sell their shares, the tracing requirement for Section 11 standing creates a substantial hurdle for future target shareholders. Once the SPAC's newly issued shares mix in the market with the SPAC's IPO shares, they typically cannot be traced to the registration statement filed in connection with the merger. Consequently, the only shareholders likely to have standing are target shareholders that still hold shares they received in the merger—if they were unaware of the misstatement or omission. There have been no Section 11 cases brought against post-merger companies or underwriters based on a merger in the past ten years.<sup>76</sup>

But SPACs and the companies with which they merge are not immune from liability. A SPAC, its officer and directors—but, again, not its underwriter—face liability risk under Section 14(a) of the Securities Exchange Act, which covers misstatements and omissions in a SPAC's proxy statement for a shareholder vote in a proposed merger.<sup>77</sup> This could be a suit to enjoin the merger or a suit for damages against the post-merger company. The former are the notorious strike suits that plaintiffs' lawyers commonly bring against mergers generally, and then drop in exchange for a small toll charge. Whereas a company is strictly liable under Section 11, however, Section 14(a) requires proof of negligence. Although Section 14(a) suits merger.<sup>78</sup> Damage suits under Section 14(a) thus pose a risk for post-merger companies, but only three have been filed against SPACs in the past ten years.

The final point of potential liability for a SPAC, its officers and its directors—but once again, not an underwriter—is a secondary offering of shares that the SPAC issues in private

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<sup>75</sup> cite

<sup>76</sup> cite

<sup>77</sup> Occasionally, SPACs make tender offers for target shares. Those transactions are subject to Section 14(e), which is essentially similar to a Section 14(a) suit.

<sup>78</sup> [cite three cases]

placements or to third-party investors at the time of the merger. Those issuances typically provide for registration rights, which are generally exercised shortly after the merger. But here again, the legal basis of liability would be Section 11, and once the shares mix in the market with shares the SPAC has issued in its IPO and merger, the tracing requirement will be a substantial hurdle for a plaintiffs' lawyer. There have been only three cases brought against SPACs in connection with secondary offerings.<sup>79</sup>

In sum, through inadvertence rather than design, the securities laws treat SPACs and traditional IPOs differently. A company going public through a SPAC can disclose more information than it could in an IPO. In addition, there are important differences in liability risk associated with a SPAC and a traditional IPO. For an underwriter, the difference is greatest. It faces essentially no risk through its involvement with a SPAC but significant risk in an IPO. As a result, the bank protects itself through a time-consuming hyper-diligence process involving the client, the client's lawyer, its own lawyer and its own analyst staff. For the company going public, an IPO exposes the company to shareholder suits under the strict liability standard of Section 11, while a SPAC requires plaintiffs to prove negligence.

### C. PIPEs

Another potential explanation for SPACs is that they allow for transactional arrangements that cannot be accommodated as well in an IPO.<sup>80</sup> The primary arrangement is a PIPE, which as we have seen SPACs commonly issue in conjunction with their merger. Third parties invest in these PIPEs, as do the sponsors themselves. In some cases, third parties invest at a discount to the IPO price. In addition, sponsors often make side payments to PIPE investors.

PIPEs allow investors to investigate proposed targets much more rigorously than can investors in a traditional IPO. Under the securities laws, any information that a company makes available to a potential investor in an IPO must be made publicly available to the market. Consequently, when a company and its underwriter go on a "roadshow" to market their shares, they prepare a single presentation a present only that information to potential investors. In contrast, a SPAC and its target bring potential PIPE investors "over the wall" and, with the protection of a nondisclosure agreement, provide them with confidential information that is not

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<sup>79</sup> cite

<sup>80</sup> cites

provided to public shareholders. Moreover, a PIPE investor's due diligence can be an iterative process as it analyzes information from the target company and goes back for more. For companies with key information that cannot be made public, or soft information that is not conveyed effectively through the formalized communications of the IPO process, this process can be a better means of price discovery than is the roadshow and "book building" process of a traditional IPO.

Thus, a PIPE is not merely a means by which a SPAC finances its merger. It is also a means of signaling to the SPAC's public shareholders that the value a PIPE investor sees in a target, after engaging in extensive due diligence, is worth the price.

A second, less common, feature of SPAC mergers is a PIPE at a discount to the IPO price, or a side payment by the sponsor to either a PIPE investor.<sup>81</sup> One would expect deals of this kind to trigger a high level of redemptions. The signal seems to be that, after much investigation of confidential information, the investor concluded that the price is too high. On the other hand, since we do see mergers like this without an overwhelming number of redemptions,<sup>82</sup> it could be that the market chalks up the PIPE investor's discount to bargaining power or the fact that they are making a binding commitment earlier than other investors. Alternatively, there could be heterogeneous valuation of the target. The flexibility that PIPE pricing and sponsor side payments provide allows for a degree of price discrimination in the investment the SPAC makes in the target.

In sum, the PIPE is a beneficial element of the SPAC process that responds to asymmetric information in the target. As we discuss below, however, a PIPE can be integrated into an IPO as well.

#### D. Is a SPAC Necessary?

The traditional IPO process may well leave a gap in the market for bringing private companies public, but are SPACs the best way to fill that gap? The source of SPACs' dilution and misaligned incentives is the two-year delay between a its IPO and its merger. There is nothing inherently beneficial in that delay. The merger is essentially a do-over of the IPO but with a real business going public.

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<sup>81</sup> Or to a public investor in exchange for a commitment not to redeem shares.

<sup>82</sup> Cite examples

Some of the regulatory leniency enjoyed by SPACs can be gained in a direct listing. The leniency available in a direct listing is the underwriter's avoidance of Section 11 liability risk.<sup>83</sup> If a private company does not need additional equity and it can sustain sufficient float to accomplish a direct listing, then a direct listing may be more attractive than a SPAC. Not only does it avoid the transaction costs of a SPAC, it avoids the underwriting costs of an IPO.<sup>84</sup> To the extent a direct listing does not provide the price discovery that a SPAC with a PIPE can offer, it merely needs to add a PIPE.<sup>85</sup>

An IPO combined with a PIPE can also offer the transactional benefits of a SPAC—but without the regulatory advantages. Combining a PIPE with an IPO is permissible under the securities laws. In fact, structures like this have been used recently. Uber's 2019 IPO included a pre-IPO commitment by PayPal to purchase \$500 million in shares at the IPO, contingent on the IPO closing.<sup>86</sup> There is also no impediment if the private placement is priced at a discount to the IPO price, as some SPAC PIPEs are. 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, again contingent on the closing of the IPO.<sup>87</sup> We see similar practices in the capital markets of other countries as well. The UK, much of Europe, Hong Kong, and India use "cornerstone," or "anchor," investors in IPOs, which often make binding commitments to invest in IPOs, sometimes at the IPO price and sometimes at a discount.<sup>88</sup> We have simply added a sponsor to his sort of arrangement.

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<sup>83</sup> Cite UChi article

<sup>84</sup> cite

<sup>85</sup> For a recommendation to companies to consider this option, see "10 Key Considerations in Preparing for a Direct Listing" by Cooley LLP. Available <https://www.cooley.com/-/media/cooley/pdf/practices/cooley-10-direct-listing-considerations.ashx?la=en&hash=DF2611B8FD7E29A02C9CD67D9C7BEF41>

<sup>86</sup> See, e.g., Uber's S-1A, filed April 26, 2019. See also the SEC's no-action letter to Black Box Incorporated, (June 26, 1990). Black Box sought staff's guidance on interpreting SEC Rule 152 and whether a private offering of securities would be integrated with its planned IPO. The transaction pursued by Black Box was more complex than the contingent private offerings pursued by Uber and Dun & Bradstreet more recently. Nevertheless, it shared similar features, such as an effective price paid by private placement investors that would be determined based on a fractional formula of the IPO price.

<sup>87</sup> See, e.g., Dun & Bradstreet's S-1A, filed with the SEC on June 26, 2020. See "Club IPOs and Insider Participation in IPOs" by Morrison & Forrester, available <https://media2.mofo.com/documents/161213-insider-participation-ipos.pdf>

<sup>88</sup> For discussions of these practices in international settings, see, e.g., "Committed anchor investment and IPO survival – The roles of cornerstone and strategic investors" (Journal of Corporate Finance – 2016), "Allocation to Anchor Investors, Underpricing, and the After-Market Performance of IPOs" (Financial Management – 2019), "Hong Kong's cornerstone strategy is shifting to US IPOs. But is it consistent with US rules?" (International Financial Law Review - 2014). See also "Cornerstone investments in UK initial public offerings" (Davis Polk), 21 April 2020, available <https://www.lexology.com/library/detail.aspx?g=a3ebe9b5-5fe0-4ffb-9032-a7eb0b84d950>,

The one element that is missing from these alternatives to a SPAC is the sponsor. The sponsor can play a key role in addressing information asymmetry between potential investors and private companies of the sort that SPACs target. In addition, at least some sponsors plan to support a target following the merger. There is no reason why a sponsor could not be added to the IPO-plus-PIPE or direct listing-plus-PIPE structures. Indeed, to a degree, we see this when a venture capitalist or private equity firm remains involved with a portfolio company after it goes public. Because of those funds' business model, however, their involvement tends to be short in duration.

Consider the following "sponsored" IPO. It would begin with a sponsor that plays the same role that a sponsor plays in a SPAC. The sponsor would identify a company in which it wants to invest, and that it wants to help bring public and support after the company goes public. Presumably, this would be a company that would not be attractive for a traditional IPO. The sponsor would then seek third-party investors for a private placement. Once the sponsor has identified an interested target and has lined up an amount of equity investment that satisfies the target as a minimum acceptable equity infusion, the sponsor would approach an underwriter—presumably, from among the underwriters that have been comfortable in the past with SPACs or with particular SPAC sponsors. Our premise is that a firm-commitment underwriting would not be possible, so our sponsored IPO would employ a best-efforts offering to raise additional funds beyond the amounts available through sponsor's and third-parties' private placements.

This arrangement parallels capital raising in a SPAC. The minimum amount of capital raised in a PIPE before the underwriter is engaged parallels the minimum equity specified as a condition of closing in a merger agreement with a SPAC. Often, that amount is covered by a SPAC's private placement at the time of a merger. In addition, a SPAC underwriting is, in effect, as best efforts underwriting, since shares issued are subject to redemption.<sup>89</sup> Since there is no two-year delay between the time equity is raised and the time it is invested in this sponsored IPO, there is no need to compensate investors for having their funds sit idle, and hence no need for

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and "Cornerstone Investments: A Foundation for Private Equity-Sponsored IPO Exits" June 24, 2019 (Latham) available <https://www.latham.london/2019/06/cornerstone-investments-and-private-equity-sponsored-ipo-exits/>.

<sup>89</sup> SPAC merger agreements do generally contain minimum requirements for capital raised. Frequently these minimums are met via PIPE investments. At times, the SPAC sponsor will also commit to make a PIPE investment as necessary if PIPE investors and non-redeeming shareholders do not supply enough money for the minimum requirement. This kind of "semi-firm commitment" underwriting could also in theory be present in a "Sponsored" IPO.

warrants or rights. The company going public would issue only shares, and the absence of the warrant overhang should enhance the pricing of its shares.

The sponsor would still need compensation for the service it provides. It would negotiate that compensation with the company it helps bring public, but the compensation would presumably take the form of shares that would be locked up for a period of time following the IPO—just as SPAC sponsors' shares are. We expect that the sponsor would demand less compensation than the SPAC sponsor's 20% promote, because in contrast to a SPAC, a sponsor in this transaction would not put its own funds at risk unless and until the company goes public.<sup>90</sup>

Underwriting fees would be lower as well. Best efforts underwriting fees are lower than firm commitment fees, and as we have seen, the net-of-redemption underwriting fees in SPACs are far higher than ordinary firm commitment fees.

The sponsor's incentives would also be more aligned with shareholder interests under this modified IPO. There would be no two-year deadline that may tempt the sponsor to enter into a bad deal. To the extent the company compensates the sponsor with shares, the sponsor may still gain if the company's shares decline in value following the IPO, as is common in SPACs. The company, however, could negotiate greater incentive compatibility in the form of warrants or, equivalently, shares conditioned on post-IPO price increases. This would be consistent with some SPAC deals today whereby the sponsor's shares vest only if the post-merger company's share price hits specified milestones.

In sum, the sponsored IPO would include (a) private investment by a sponsor, (b) private investment by third parties, and (c) a best-efforts offering. The private placements would be large enough to satisfy the minimum needs of the company going public, and the public offering would amount to as much equity as the underwriter can sell up to whatever limit the company sets.

This sponsored IPO provides the same transactional benefits as a SPAC. But it does not provide the same insulation from potential liability under the securities laws. The private company is doing a public offering, so the safe harbor for forward-looking statements would not be available. Section 11 would also apply to the offering, so the issuer would be subject to strict liability for material misstatements and omissions, and its officers and directors would be

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<sup>90</sup> Furthermore, some sponsor expenses, such as contributing money directly to the SPAC trust in order to provide an above-treasury return to redeeming investors would be completely eliminated.

exposed subject to the due diligence defense. But because the offering is facilitated by a bank on a best efforts basis, the underwriter may be less exposed to liability as well.

So, why do we see so few IPOs with PIPEs and no IPOs similar to the sponsored IPO we propose? One reason may be the regulatory benefits available to a SPAC. Another reason may be the force of established practices. SPACs have become largely standardized. Documentation is standardized, merger and private placement processes are standardized, and there is a clientele of investors—the SPAC Mafia—that is familiar with the SPAC deal. Deviating from IPO norms may be seen (accurately or not) as sending a negative signal about an issuer. We cannot confirm or deny either of these explanations. But we can confidently state that SPACs entail transaction costs and misaligned incentives that make it difficult to explain their persistence in terms of efficiency.

#### E. Pershing Square Tontine Holdings—The Exception That Proves the Rule?

In July 2020, shortly after the time period covered in the empirical analyses above, Pershing Square Tontine Holdings (PSTH) broke the mold—with a different type of SPAC. PSTH went public as the largest SPAC in history, and with a structure entirely different from what we have described above. Most importantly, Pershing Square TH (“Pershing Square”) the sponsor of PSTH, will take no promote at all. It will invest \$65 million in PSTH in exchange for warrants that are twenty percent out of the money and that are not saleable or exercisable until three years after a merger. So, Pershing Square will earn a return on its investment only if the shareholders earn a return of 20% or more. In addition, Pershing Square’s affiliates entered into a forward purchase agreement under which they are committed to invest \$1 billion at the time of a merger and have an option to invest another \$2 billion. They will make those investments in exchange for units consisting of one share and 1/3 of a warrant at a price of \$20 per unit. So, like its initial investment, these investments will yield a positive return only if PSTH’s public shareholders earn a positive return.

Another unique aspect of PSTH is its redemption commitment. As is true of other SPAC’s, shares of PSTH are redeemable with an interest rate somewhat higher than the Treasury note rate. But unlike other SPACs, PSTH units contain warrants for a much smaller fraction of a share than do other SPACs—just one ninth of a share. Furthermore, PSTH will reward nonredeeming shareholders with additional warrants—a number that will bring its public

warrants up to at least one-third per share for those shareholders that do not redeem their shares. But in addition, PSTH's "tontine" feature provides that the warrants left behind by shareholders that redeem their shares will be reallocated to nonredeeming shareholders. That is, a fixed number of warrants will be issued at the time of PSTH's merger to shareholders that do not redeem their shares. So, the more shares that are redeemed, the more warrants nonredeeming shareholders will receive. This will encourage shareholders not to redeem.

Consequently, for a nonredeeming shareholder, PSTH is more attractive than other SPACs. The sponsor does not take a 20% ownership in the SPAC, the incentives of the sponsor to find an attractive merger target, and to merge at an attractive price, are well aligned with shareholder interests. PSTH's redemption terms can reasonably be expected to lead to relatively few redemptions, which will reduce the warrant overhang per share outstanding. Finally, the dilution attributable to the sponsor's warrants (plus the individual directors' warrants) is capped at 6.21% of post-merger shares.

Pershing Square is explicit regarding its advantages over a traditional IPO. In its prospectus, for example, it states:

Our stockholders are subject to far less potential dilution than is the case with many other blank check companies. Unlike other blank check companies, our Sponsor is not being afforded the opportunity to purchase 20% of our stock at a nominal price; our Sponsor will instead purchase the Sponsor Warrants at their fair market value, and the Sponsor Warrants will generally not be salable, transferable or exercisable until three years after the date of our initial business combination. Thus, unlike other situations in which the Sponsor is entitled to a portion of the value of the company regardless as to whether the company increases or decreases in value, our Sponsor will only participate in the value of our company if our stock price is at least 20% higher than the initial offering price in this offering (and only then if the Sponsor Warrants are salable, transferable or exercisable at that time). Furthermore, our Sponsor is paying fair market value (as of the date of such purchase) for the opportunity to realize any such gain, and any such gains will accrue to the Pershing Square Funds, rather than to the individual members of a Sponsor entity. We believe that this incentive structure is better aligned with our stockholders and potential merger partners, substantially less dilutive than typical incentive arrangements in other

blank check companies, and therefore will be more attractive to potential investors in this offering.<sup>91</sup>

Is PSHT the exception that proves the rule—that is, the rule that traditional SPACs have adopted a dysfunctional structure? On the first day it began trading, PSHT’s share price rose to about 20% above its IPO price [and has remained there]. This has not happened with any other SPAC. This suggests that the market places substantial value on the incentive compatibility of PSHT’s structure coupled with Pershing Square’s abilities. Other SPACs, with traditional SPAC structures, have impressive sponsors as well—for instance, TPG sponsored a SPAC that went public in 2020. Its share price has remained around \$10, its redemption price, since its IPO. It thus appears that PSHT supports our analysis, at least to some extent.

We do wonder why Pershing Square did not find a target first and then facilitate an IPO along the lines of the sponsored IPO that we describe. To some extent, PSHT answered that question in its prospectus, stating: “The nature of the IPO process—whereby the pricing, the ultimate terms of the offering, and even whether or not the offering can be completed remain unknown until the day of pricing of the offering—makes the IPO process inherently uncertain and risky.”<sup>92</sup> PSHT recognized that redemption risk in a SPAC is “comparable to the risks inherent in the IPO market.”<sup>93</sup> But it explained that its forward purchase agreement of between \$1 billion and \$3 billion ameliorates the risk of redemption,<sup>94</sup> and as explained above, PSHT structured its redemption terms to discourage redemption. Pershing Square thus made the judgment that PHST’s unique SPAC structure is superior to an IPO, however modified.

Will other SPACs follow the PSHT structure? That remains to be seen. Since PSHT announced its IPO, 24 SPACs have completed IPOs (as of August 17, 2020) and all have adopted the traditional SPAC structure.<sup>95</sup> The market reaction to PSHT may well be attractive to future sponsors. On the other hand, the 20% promote is attractive as well, and the market has tolerated that in SPACs since the beginning. No SPAC until PSHT has deviated from it. It is possible that some SPACs will adopt PSHT’s approach to warrants and redemptions. But those

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<sup>91</sup> Pershing Square Tontine Holdings Form 424B4, filed July 26, 2020, p.7.

<sup>92</sup> *Id.* at 5.

<sup>93</sup> *Id.* at 6.

<sup>94</sup> *Id.*

<sup>95</sup> Even amongst SPACs that have made preliminary filings for IPOs, but not yet completed them, none have followed PSHT in giving up the sponsor’s 20% promote.

without Pershing Square's reputation may not attract enough IPO investors with so few warrants. Clearly, the SPAC Mafia will not be interested. Finally, for many sponsors, the large advance purchase commitment will not be possible. So, we will see.

## **Conclusion**

Not long ago, SPACs were described as a problematic “backdoor” to the public markets.<sup>96</sup> Now they are described as the “hot new thing.”<sup>97</sup> Both descriptions are accurate. The SPAC structure is highly problematic. The sponsor's promote, the underwriting fees for shares that will be redeemed, and the overhang of warrants and rights, create misaligned incentives and high costs for their eventual merger.

SPACs appear to be vehicles by which investors can invest in the skills of a sponsor that will attempt to locate an attractive company to bring public and work with that company thereafter to create value. Because SPACs' shares are publicly traded, anyone can invest in a SPAC. Hence, they have been described as “democratized private equity.” But, as we have shown, in practice SPACs are neither democratized nor private equity. Their investors are overwhelmingly large funds, and among those funds, there is a steady clientele funds dubbed the “SPAC Mafia.” Those funds buy SPAC shares in their IPO and either redeem or sell them before the merger. Other institutions buy shares around the time of the merger and either hold or trade those shares as they would with shares of any a public company.

On the whole, the performance of companies that SPACs have brought public has been poor. Companies that merged with SPACs that had gone public in 2015, and that therefore have at least two years of performance as public companies, produced mean excess returns of negative 43.8% over two years. When adjusted by an index of IPOs, their returns were negative 60.6%. Companies that merged with SPACs that went public in 2019 and 2020 have only a few months of performance as public companies, but their mean returns are also poor. Mean excess returns for this cohort over three months is negative 2.3% and, mean returns adjusted by the IPO index

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<sup>96</sup> cite

<sup>97</sup> Nicholas Jasinski, SPACs Are All the Rage, but These Private-Equity-Like Vehicles Are Complicated. Here's What You Need to Know, <https://www.barrons.com/articles/spacs-are-the-new-hot-thing-on-wall-street-51596240193>

were negative 17%. These three-month returns are roughly similar to the three-month returns of the 2015 cohort.

Nonetheless, SPACs in a sense are the hot new thing. High-profile funds and CEOs have sponsored SPACs in 2019 and 2020. On average, but far from universally, the companies that these SPACs brought public have done better, albeit only over three months so far. Their results suggest that some SPACs can overcome the high transaction costs that SPACs entail—presumably with the skills and experience they bring in selecting companies with which to merge and by committing to work with those companies thereafter.

Notwithstanding the success of some high-profile sponsors, we question why the SPAC structure persists. One reason, we expect, is that SPACs are treated better under the securities laws than are IPOs. This is not the result of a deliberate policy decision to treat SPACs better. It is a loophole. If protection from the securities laws is not necessary to make SPACs viable, then there are alternatives to SPACs. Either a direct listing or an IPO in conjunction with a PIPE could accomplish much of the same transactional benefits as a SPAC. To the extent the sponsor brings value to SPAC transactions, as we assume they do, a sponsor could be incorporated into a direct listing or IPO as well. We propose a sponsored IPO in which a sponsor plays much the same role that it plays in a SPAC, but it finds the company first and then guides it through an IPO and PIPE and continues to work with the company thereafter. In effect, it starts where the real action starts with a SPAC—at the merger stage. The fact that SPACs are “hot” and these other means of going public are not suggests either the importance of SPACs’ regulatory advantage or the power of a well-traveled path.

## Appendix: Other Prospective Benefits of SPACs

In the body of this article, we discuss what we see as the most salient regulatory and non-regulatory benefits of SPACs. The popular press, industry publications, and law firm memos are also replete with other assertions about the benefits of SPACs. In this appendix, we analyze some of the asserted benefits that we do not address in the body.

One particularly common claim towards SPAC advantages is that, compared to traditional IPOs, they offer greater price certainty.<sup>98</sup> A company going public via SPAC, it is commonly asserted, might not know precisely how many shares it will sell (due to uncertain redemptions), but at least it will know that the shares it sells will be for \$10 each.

Tautologically, any deal has price certainty once it closes. Thus, to inquire about price certainty, one must also specify the time at which price certainty is achieved. Some might imagine that a SPAC transaction gives a company going public price certainty as of the date of signing the merger agreement, which will specify key terms such as what percentage of the company will be sold to the SPAC in exchange for what amount of money. In fact, however, it is common for these agreements to be revised multiple times before a deal finally closes. The initial agreement represents an opening point in negotiations. The SPAC sponsor and the merger target's representatives will then go on what is in essence a "road show," parallel to the practice in traditional IPOs. If investors are not sufficiently interested in buying in to the deal according to the terms originally announced, then the company seeking to go public must decide either to call off the deal or to revise the terms. Clearly then it would be misguided to portray SPACs as giving price certainty to companies going public as of the date of initially signing the merger agreement.

What about the point at which a final merger agreement is signed? This will often happen roughly a month before the deal closes. On paper, a company going public via SPAC might look like it is getting price certainty at this point (selling shares for \$10 each), even if it does not know how many shares it will sell at this point. A complicating factor, however, is that a SPAC transaction comes with a large number of fixed costs: the sponsor's promote, outstanding warrants, and underwriting fees. By default, these costs do not scale down as money delivered

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<sup>98</sup> See, e.g., the recent Wachtell Lipton memo on SPACs <https://www.wlrk.com/webdocs/wlrknew/ClientMemos/WLRK/WLRK.27066.20.pdf>

by the SPAC decreases. Fixed costs of \$20 million, therefore, can seem very different depending on whether the SPAC delivers \$20 million to the company it brings public or \$200 million. While on paper, it might appear that the company is selling shares for the same price in each instance, the effective price per share that the firm's owners receive, net of costs, differs wildly. In theory, firms going public via SPAC could negotiate around this. While we see some evidence of this occurring in limited senses (for instance, merger agreements that reduce sponsor shares by a fixed amount if money in trust is below a given threshold), we have yet to see an instance where these costs scale fully, or even close to fully, to match reduced costs to reductions in money delivered to merger targets.

This does not mean that no SPAC merger agreement has ever provided for such full scaling of costs - we have not investigated each one. But, the empirical evidence on the distribution of costs, and the large number of instances in which costs exceed money delivered to targets, suggest at least that a large number of companies going public via SPAC do not negotiate for this. Furthermore, even if a company going public via SPAC could negotiate with a sponsor to reduce its shares fully in proportion to reductions in money delivered, achieving similar deals to account for fixed costs of warrants and IPO underwriting would be far more difficult. In all likelihood, the only way to account for these, and keep costs for a target fixed, would be to get the sponsor to agree, for instance, to cancel 1.5 of its shares for every additional one share redeemed. It is perhaps unsurprising that this would be a difficult concession to extract from a SPAC sponsor.

As a result, while a firm going public via SPAC may have certainty in the absolute price per share it sells for, it will frequently retain significant uncertainty about price per share net of fees.