

Perverse incentives of special purpose acquisition companies, the “poor man’s private equity funds”[☆]

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Abstract

Special purpose acquisition companies (SPACs) are an alternative investment, structured as a one-shot private equity (PE) deal. Significant cross-sectional variation exists in SPACs’ performance, which can be explained by the strong implicit incentives embedded in contracts. SPAC performance is worse for acquisitions announced near the predetermined two-year deadline, for acquisitions with deferred initial public offering underwriting fees, and for acquisitions with market value close to the required 80% threshold. Also, sponsors’ involvement in the merged firm’s governance improves long-term performance. This evidence has important implications given SPACs’ high popularity in recent years and the new PE industry’s trend toward deal-by-deal fund-raising.

Keywords: SPACs, Private equity, IPOs, Incentives, Contract design

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1. Introduction

Special purpose acquisition companies (SPACs) are blank-check companies that have no operations but go public with the intention of merging with or acquiring a company with the proceeds of the SPAC's initial public offering (IPO) of shares. Since 2003, SPACs have raised more than \$31 billion in U.S. markets. They have represented a significant proportion of IPOs, especially in the years leading up to the 2007–2009 financial crisis, reaching more than one-third of U.S. IPO volume in 2007 (See Fig. 1). This paper studies the performance of SPACs and how incentives created by the contractual features of SPACs [some of which bear a strong resemblance to that of private equity (PE)] affect their performance.

[Insert Fig. 1 near here]

I find that, on average, SPACs perform extremely poorly, whether measured by long-run stock abnormal returns or operating performance. The average four-year buy-and-hold return following the SPAC IPO is -51.9%, compared with an average return of 8.5% for all other companies that became public in the year of the SPAC IPO. Moreover, considerable cross-sectional variation exists in the degree to which SPACs destroy value with their acquisitions. I find strong evidence that much of SPAC value destruction through bad acquisitions is a result of certain contractual features that give SPAC managers incentives to pursue any acquisition over no acquisition. For instance, performance is worse when deals are completed just before the contractually specified deadline for a SPAC acquisition. This finding suggests that, as the deadline approaches, SPAC managers become desperate to do any acquisition, even a bad one, to avoid missing the deadline and having to liquidate the SPAC. Along the same lines, performance is worse if the deal just barely meets the contractually specified minimum transaction value. In addition, I find that performance is worse when SPAC IPO underwriter fees are deferred and paid upon a SPAC's successful merger completion, suggesting that underwriters with an interest in a deal being

30 completed, regardless of its quality, are more likely to pitch bad deals to SPAC
sponsors.

I also find that increasing SPAC sponsors' ownership is detrimental to performance and that appointing one of the sponsors as a chairman in the merged company improves it. Finally, evidence from the accounting performance, using
35 measures such as operating margins and return on sales, further confirms that SPAC acquisitions significantly under-perform various benchmarks and that the poor operating performance of SPACs does not appear to be caused by higher leverage and financial distress costs. In summary, while the average investor in SPAC acquisitions incurs large losses in the long run, the perverse incentives of
40 SPACs cause some investors to lose more than others.

My results are important because they provide evidence of the detrimental effects of SPAC structure on sponsors to pursue a bad acquisition instead of no acquisition. The results also relate to the PE industry, as some of the structural features and implicit incentives that affect SPAC performance are
45 some of the most important hallmarks of the traditional private equity contract (Rodrigues and Stegemoller, 2013).² Above all, the evidence from this paper is especially relevant given the recent trend in the PE industry toward alternative, more transparent, and more flexible structures of investment. Although the PE industry has survived the 2007–2009 global financial crisis, it is currently undergoing significant changes and increased regulation, in the wake of
50 public demand, media scrutiny, and government pressure. The use of alternative structures and asset classes is becoming more common as limited partners explore options beyond the traditional ten-year blind pool fund. Moreover, the

²For instance, both forms of investment have a finite life: two years for SPACs and typically ten years for a traditional PE. Also, the managerial compensation in both cases is incentive-driven. SPAC managers obtain 20% of the initial equity raised only upon successful merger completion, and PE managers are awarded 20% of the gains only upon successful exit. In addition, while SPAC sponsors are required to spend at least 80% of the money raised on a given target, PE investors are restricted on the amount of fund capital that can be used on a given deal.

deal-by-deal model of fund-raising (whereby investors are presented investment
55 opportunities and can either opt in or opt out on a case-by-case basis, without
having to lock up their money for a ten-year period) was recently selected by
investors as one of the most popular forms of tailor-made funds (see Fig. 2).³
However, while tough fund-raising conditions and market dynamics are likely
to stimulate the growth of alternative PE structures, unless these structures are
60 designed to align the interests of managers and investors, they may not always
be optimal.

[Insert Fig. 2 near here]

The literature on SPACs is limited compared with the importance of SPAC
deals. Researchers have overlooked the richness of empirical data that SPACs'
65 public disclosures offer and the unique form of SPACs (public form of private
equity) that can be used to shed more light on the classic PE contract. The
few papers that have studied them have mainly described their specific struc-
ture characteristics and legal implications. For instance, Heyman (2007) illus-
trates some of the important features of SPACs, and Rodrigues and Stegemoller
70 (2013) point out the legal differences between SPACs and private equity funds.
Sjostrom (2008) compares SPAC characteristics with those of blank-check com-
panies that are involved in reverse mergers, while Rodrigues and Stegemoller
(2014) compare them with traditional IPOs. Berger (2008) underlines the in-
creasing popularity of SPACs and highlights the various motives that lead pri-
75 vate targets to pursue an acquisition by a SPAC. Other recent papers examine
the determinants of SPAC merger approvals (Cumming et al., 2014; Lakice-
vic et al., 2013). Papers also highlight the conflicts of interest inherent in the
SPAC structure (Jog and Sun, 2007), the role that SPAC managers play in the
approval of value-destroying acquisitions (Jenkinson and Sousa, 2011), and the
80 relation between SPACs governance and ownership and their short- and long-

³For additional discussion and analysis of the recent shifts in the business model of private equity, see Jacobides and Saaverda (2015).

run performance (Howe and O'Brien, 2012). However, because these are some of the earliest empirical papers on the topic, their cross-sectional multivariate analyses are restricted because of their small sample size. Finally, Lakicevic and Vulcanovic (2013) examine the return patterns of different SPAC securities, 85 Lewellen (2009) compares SPAC returns with those of private equity funds, and Tran (2010), whose paper is probably the closest to this study, compares the short-term performance of acquisitions by SPAC bidders with other acquisitions.

In this paper, I begin by examining the short-term performance of SPAC deals, differentiating between deal type (completed versus withdrawn). While 90 Tran (2010) examines all deal announcements and finds positive abnormal performance observed around the acquisition announcement, I show that this positive effect is driven only by the completed deals.⁴ I then examine the long-term stock and operating performance for up to five years following the SPAC IPO. In contrast to Howe and O'Brien (2012), who also study SPACs' long-term stock 95 performance, I collect all governance, ownership, and control variables from the definitive proxy statement [Securities and Exchange Commission (SEC) Form DEFM 14A] between the SPAC and the target, not from the SPAC IPO prospectus. While the IPO prospectus reports important information about the SPAC following its IPO, Form DEFM 14A contains additional information relating 100 to the governance, ownership, and compensation of the combined company following the completion of the merger. I measure long-term performance from the date of SPAC IPO, not from the merger vote date. Setting the end date of the holding period relative to the merger vote date means that the holding periods are different for each SPAC and, thus, the returns are not comparable. 105 I use a fixed holding period that is uniform across all SPACs. I adjust the short- and long-term returns for the market performance, instead of using raw

⁴One-third of the SPAC deals in Tran's sample are later withdrawn and are never completed. Further, while the time to acquisition announcement is included in his regression analysis of short-term performance, he allows for linearity only in the relation between time and performance, while I find that the relation is in fact nonlinear.

returns. This adjustment removes the effect that market timing might have on performance. Finally, I perform multivariate analyses controlling for the effect of various important factors instead of relying only on univariate tests. This is
110 the main contribution of the paper, as I introduce additional factors related to the conflicts of interest between various parties (including sponsors, target insiders, and SPAC IPO underwriters) involved in the deal, ownership structure, and corporate governance of the merged firms and show that they have significant explanatory power for the cross-sectional variation in the performance of
115 SPAC acquisitions.

The remainder of the paper is organized as follows. Section 2 discusses the SPAC transactions in more detail. Section 3 describes the characteristics of the sample. Section 4 analyses the short- and long-term performance, as well as the operating performance, of the companies. Section 5 presents the cross-sectional
120 variation in performance. Section 6 concludes.

2. Description of SPAC transactions

2.1. *The acquirer*

A SPAC is a blank-check company formed to raise funds in a public stock offering for the sole purpose of purchasing an operating business. A SPAC is
125 typically established by a small group of experienced managers (the sponsors), who rely mainly on their reputation to raise capital by creating a publicly traded shell company and offering shares in the shell company to investors via an IPO. The IPO is structured as a sale of units consisting of both common stock and in-the-money warrants, which cannot be exercised until the SPAC completes an
130 acquisition. Usually, the common shares and warrants are decoupled from the units, and they are traded separately after the IPO has been completed.

Upon the completion of the IPO, a minimum of 85% of the net proceeds of the offering are placed in an escrow or trust account, invested in low-risk U.S. government securities, until the SPAC's management makes an acquisition.⁵

⁵SEC Rule 419 requires a blank-check company to hold 90% of the net IPO proceeds in

135 These funds are released upon the earlier of the completion of a business combination or the liquidation of the SPAC. The management is typically allowed to use the remainder of the proceeds that are not held in the trust as well as a predetermined fraction of the interest earned on the trust account to cover administrative expenses, fees, and working capital. The costs of due diligence on
140 prospective targets, as well as the costs of negotiation, structuring, and gaining shareholder approval for the merger, are paid from this money.

SPAC managers are not granted a salary or other cash compensation.⁶ They commonly receive a 20% interest in the SPAC, which is usually purchased in a private placement executed prior to the IPO. They may also purchase heavily
145 discounted warrants through a private placement around the time of the IPO. If a deal is made, the 20% share of the founders becomes very valuable. If the SPAC liquidates without having completed an acquisition, the shares and warrants owned by the sponsors end up worthless. Sponsors do not receive any of the liquidation proceeds if a deal is not made. This situation, in effect,
150 creates an extremely strong economic incentive for the founders of the SPAC to complete an acquisition prior to the SPAC's expiration date.

an escrow or trust account until it completes an acquisition. While earlier SPACs tended to put 85% in trust, the new generation SPACs are placing between 95% and 100% in the trust account (Rodrigues and Stegemoller, 2013).

⁶SPAC managers are allowed to use a maximum of 15% of the IPO proceeds for working capital. Examining IPO prospectuses, I find that SPAC managers commonly allocate a standard amount of \$180,000 to cover their administrative expenses over the two-year period. Furthermore, the money is usually being paid to a company that is affiliated to either one or more of the SPAC sponsors. I also find that a significant portion of the rest of the proceeds (that are being allocated for working capital) is used by the SPAC sponsors to pay for director and officer liability insurance premiums. When I study the relation between the size of the insurance premiums they buy and the stock market reaction to the acquisition announcement, I find a significantly negative relation between the two. SPACs with sponsors that insure themselves with higher premiums against potential future lawsuits are perceived to make lower quality deals (Lin et al., 2011).

2.2. *The acquisition*

The founders normally have only 18 months from the date of the IPO to make an acquisition, plus a six-month grace period if a deal is announced but
155 not completed by then. If the SPAC does not acquire a target firm within the maximum period of two years, the company is required to liquidate and the escrowed IPO proceeds are distributed pro rata to holders of IPO shares (Savitz, 2005).

Given the time pressure and the strong incentives of the sponsors of the
160 SPAC to close an acquisition within the fixed time frame, the process of finding a suitable target starts immediately after the IPO and, in many cases, involves the consideration of a large number of potential target candidates (Tran, 2010). Although SPAC sponsors usually do not have a target company in mind at the time of the IPO, they do, based on their particular expertise, typically have a
165 specific industry or geographic region of interest for their future acquisition.

Another important characteristic of the SPAC is that it must spend at least 80% of its net assets on the business combination to avoid liquidation. While in some rare cases SPACs attempt to acquire multiple targets at the same time, the most common approach is the acquisition of a single target. Nevertheless,
170 the fact that SPACs must spend 80% of the invested money on the deal, a fact of which the target's own management and owners are well aware, could lead SPAC sponsors to overpay for the target company.

SPACs also rely on the advice of investment bankers, private equity professionals, lawyers, and business owners. For instance, in many cases, the SPAC
175 IPO underwriters become the company's advisers during the acquisition negotiation process. Underwrites have incentives to engage in the merger process because a portion of their IPO underwriting fees is usually deferred and paid only upon the successful completion of a business combination by the SPAC. In other words, if a SPAC fails to make an acquisition, the underwriters re-
180 ceive only a fraction of their total fee. While this in effect leads to high initial trust values (lower immediate underwriting fees are subtracted at the time of the IPO), it also creates a strong incentive for the underwriters to push for any

potential target and to close a merger on time.

SPAC shareholders are allowed to vote on a proposed business combination,
185 even though such approval may not be required under state law.⁷ A proposed
acquisition is approved by the share holders if (1) a majority of shareholders
vote to approve the transaction and (2) a substantial percentage of shareholders
(typically 60%–80%) agree not to redeem their shares for the pro rata trust value
on the date of the shareholder vote. In other words, if more than a specified
190 percentage (the conversion threshold) of SPAC investors cashed out their shares
from the trust fund (typically 20%), the acquisition would not go forward. The
two conditions must be satisfied for the acquisition to be approved. External
shareholders who vote against a proposed acquisition are entitled to redeem
their common stock in return for a pro rata share of the value held in trust if
195 the acquisition is ultimately approved. The shareholders who choose to redeem
their shares are allowed to keep or exercise their warrants, or both, irrespective
of their voting decision.

2.3. The target

The SPAC may be an attractive way for private companies to obtain access
200 to additional capital without having to do an IPO on their own. The target
companies acquired by a SPAC avoid the lengthy process of doing a traditional
IPO, as they are not required to supply the detailed financial statements and
other disclosures that usually accompany initial public offerings (see Sjostrom,
2008). In addition, they save on the extremely high costs associated with the
205 traditional IPO underwriting process (Loughran and Ritter, 2002).⁸

⁷Most acquirers' shareholders are allowed to vote on stock-for-stock acquisitions only if the expected equity dilution factor from the business combination exceeds 20% (Hsieh and Wang, 2008). SPAC investors are in fact given two votes—one on the proposed acquisition and one on whether they want to withdraw their money from the fund.

⁸Although uncommon, a SPAC acquirer could buy a publicly traded company. Nine percent of all announced acquisitions involve public targets. I also check whether some of the deals involve targets that have previously tried and failed to undergo an IPO. I find only four deals of previously withdrawn IPOs, largely because of poor market conditions.

Given their large cash reserves, SPACs may also be appealing to target companies with owners that prefer to cash out. By allowing the company to be purchased by a SPAC, target insiders gain liquidity without having to sell their shares via a traditional IPO.⁹ Similarly, SPACs may be used by private equity
210 firms as an exit vehicle of their portfolio companies.

Target companies may value not only the access to additional capital but also the benefit they receive from the expertise of the SPAC's management team. A SPAC is formed by a group of people who are usually experts in a given industry and have demonstrated a track record of success and a proprietary edge in the
215 areas of private equity and mergers and acquisitions.¹⁰

3. Sample selection and sample characteristics

I gather data on SPAC acquisitions from a variety of sources. To identify the sample, I employ a list of all SPACs that successfully completed an IPO and match it with a list of all announced (completed and withdrawn) acquisitions
220 by a SPAC acquirer over the period 2004–2010. The main data on the firms are obtained from Securities Data Company (SDC) Platinum and Thomson ONE Banker [IPO data and merger and acquisition (M&A) data], the Center for Research in Security Prices and Bloomberg (stock price data), and Compustat (accounting data). I obtain further data from S-1 (prospectuses), DEFM 14A
225 (proxy statements), and 10-K (annual reports) by searching the SEC filings in the Electronic Data Gathering, Analysis, and Retrieval (EDGAR) system.

Table 1 lists the completed acquisitions by SPACs included in my analysis, in

⁹For instance, exiting of the target's owners through an IPO may be less plausible given that most IPOs feature share lockup agreements, which prevent insiders and other pre-IPO shareholders from selling any of their shares for a specified period immediately after the IPO (typically 180 days) (Field and Hanka, 2001).

¹⁰Services Acquisition Corp. is an example of a SPAC with a high-profile management that includes former executives from Blockbuster, AutoNation, and Boca Resorts. The SPAC that has received perhaps the most media attention of all is Acquiror Technology Inc., formed by former Apple executives Steve Wozniak, Gil Amelio, and Ellen Hancock.

chronological order of their respective S-1 dates. Table 2 shows the distribution of SPAC IPOs and M&A transactions that successfully completed an acquisition within the fixed time frame and the distribution of SPACs that were liquidated because they were unable to complete an acquisition, either because they have reached the two-year deadline or because they have not managed to obtain the required shareholders' approval. The first IPO transaction took place in 2003, the bulk of the deals that entered the sample occurred in 2005 and 2007, and only six SPACs that went public in 2008 and completed an acquisition within the next two years are included in my sample. The distribution of completed acquisitions made by a SPAC acquirer over time shows that only two acquisitions took place in the first two years, 2004 and 2005, and that most of the deals are completed between 2007 and 2009. The difference in distributions between columns 2 and 3 of Table 2 gives some indication that a variation exists between SPACs in the time it takes them to complete an acquisition. Table 2 also shows that a significant portion of SPACs are being liquidated (approximately 39% of the SPACs in my sample announced an acquisition that was later withdrawn).

[Insert Tables 1 and 2 near here]

Table 3 contains the industry composition of the target firms. A significant industry variation seems to exist in the target companies. The total sample of 73 targets being acquired by SPACs is spread over 31 industries. Fifteen targets are in business services; six, in holding and other investment offices; five, in engineering, accounting, research, management, and related services; and five, in communications. The remainder of the deals are distributed over 27 industries with a maximum of three targets coming from the same industry. Apparently, SPACs are not limited to a particular industry and they complete acquisitions with target companies from numerous industries.

[Insert Table 3 near here]

Table 4 contains summary statistics of all completed acquisitions. The average (median) deal value of an acquisition by a SPAC is \$275.7 million (\$141.2

million). Based on the SPAC trading price at the time of the merger announcement, the average (median) market capitalization of acquirers is \$153.1 million (\$73.4 million). The average (median) relative size, computed as the ratio of target value over market capitalization of the acquirer, is 1.907 (1.610). This
260 implies that, on average, SPACs tend to purchase targets that are 1.9 times bigger. The financing required to pay for these larger deals is usually obtained by issuing additional equity or debt at the time of the acquisition.

[Insert Table 4 near here]

265 The SPAC sponsors, on average, collectively own approximately 11% of the shares of the new merged company, and they hold 34% of the board seats of the sample firms upon the merger completion. Although sponsors are commonly awarded 20% of the SPAC shares, their ownership may vary depending on the method of payment used in the acquisition (cash versus stock) and whether they
270 bought additional shares in the stock market. In addition, the chief executive office (CEO) comes from the SPAC sponsors in 30% of the cases; the chairman, 52% of the cases. This evidence suggests a substantial involvement by the SPAC sponsors at least in the initial operations of the newly merged companies. Sponsors did not receive any shares from only two companies in the sample and
275 did not obtain any board representation from only five companies.¹¹ The shares received by the sponsors represent the bulk of their compensation for their effort in finding a suitable target.

The target insiders own an average (median) 24.7% (21.6%) of the company after the acquisition. They supply about one-third of the directors of the new
280 company. A target insider is elected as a CEO of the new company in 66% of the cases and as a chairman in 45% of the cases. Significant variation exists in the level of post-acquisition ownership of target insiders, which is consistent

¹¹The ownership structure (sponsors, target insiders, and institutional ownership) is collected from the definitive merger proxy statements and reflects the voting rights (in some cases, shareholders may own only the cash flow rights of the shares) of different parties in the newly merged firm at the time of the acquisition completion.

with the evidence that, on one hand, SPACs may be used as an exit strategy of the target owners and, on the other hand, they may be used by targets as a
285 strategy to get access to the U.S. public market, through a reverse merger.

The primary holders of SPAC shares—institutional investors (typically represented by hedge funds)—have an average (median) ownership stake of about 29% (27%) in the new merged entity. At a first sight, these levels seem to be below the average institutional ownership level of 51.6% for all publicly traded stocks
290 as reported by Gompers and Metrick (2001). However, making any comparisons of the size of institutional ownership is difficult, given that my sample is in the bottom of the NYSE size deciles.

While underwriters are generally attracted to SPACs because of the underwriting compensation in connection with the proposed offering, the SPAC IPO
295 underwriters in 47% of the deals are also the company's acquisition advisers.¹² Furthermore, in approximately 66% of the SPAC IPO contracts, a portion of the underwriter's compensation is deferred and paid only upon a successful merger completion.¹³ This evidence is suggestive of the strong incentives of underwriters to assist the SPAC during the acquisition process, to successfully complete a
300 business combination and collect their deferred underwriting fees, as underwriters do not share in the liquidation proceeds if a deal is not made and the SPAC is liquidated. I find that the underwriter becomes the company's acquisition adviser 63% of the time if part of the underwriting fees is being deferred, but only 16% of the time if there are no deferred fees.

305 The time period between the SPAC IPO and the acquisition announcement

¹²The underwriters' interest in SPACs is a reflection not of an outsize fee, but of the industry's acceptance of this vehicle as an area of growth in an otherwise declining IPO market (Heyman, 2007). The SPAC underwriting fee in my sample varies between 3.25% and 10%, with an average fee of 7.45% for completed acquisitions (7.15% for withdrawn acquisitions), which is only slightly larger than the standard IPO fee of 7% (Chen and Ritter, 2000).

¹³The average portion of deferred fees is 42% for completed acquisitions (42% for withdrawn acquisitions), and the maximum portion that SPACs have deferred is 75% (61% for withdrawn acquisitions) of the underwriters' fees.

varies significantly. On average, a SPAC takes about 13 months to find a suitable target. However, in some cases, the acquisition is announced within three months of the IPO; in other cases, almost the whole two-year period is needed to find a target.

310 Given the requirement that the business acquired must have a market value equal to at least 80% of SPAC's net assets at the time of the acquisition, some sponsors may deliberately target the 80% threshold to complete an acquisition. I show that 24% of the deals in the sample, at the time of the acquisition completion, have a value that is within 10% of the required 80% threshold.¹⁴

315 Table 4 also reports the summary statistics of all withdrawn acquisitions. The relative size of the target firm is significantly larger for the sample of completed acquisitions versus withdrawn acquisitions. Further, acquisitions that are later withdrawn take longer from the time of the IPO to be announced, and they are more likely to have deferred underwriting fees. Although withdrawn
320 acquisitions are more likely to have deferred underwriting fees, the underwriters are less likely to become acquisition advisers for failed SPAC acquisitions.

4. Performance results

In this section, I examine the performance of SPACs in my sample. I study both stock market performance and accounting performance. In each case,
325 determining the appropriate benchmark is important. I begin by comparing

¹⁴I examine these deals in more detail by reading the information provided in the definitive proxy statement on whether the potential target satisfies the required 80% test. For these deals, one of the of the following holds: The sponsors do not look for a fairness opinion from an independent source when valuing the target; the sponsors use the services of an independent source at the time of the acquisition announcement but do not update the information at the time of the merger completion (the market valuation of the target will very likely change for the period from the acquisitions announcement to the acquisition completion date); or the sponsors state that the deal value does not satisfy the 80% test but ask shareholders to vote for the acquisition approval. In other words, although the 80% test was not satisfied, these deals were approved.

the stock price performance of companies in my sample with a measure of the overall stock market, using the return on the Russell 2000 index as a benchmark. I then report results using industry- and size-matched firms. Further, I test the robustness of my results by comparing the performance of SPACs with the performance of all companies that go public in the same year as the SPAC IPO. I examine SPACs' trading behavior over their lifespan and their performance at the time of the acquisition announcement, as well as in the long run, up to five years following their IPO.

4.1. Stock returns at the acquisition announcement

I measure the market reaction to SPAC-related acquisitions by calculating the cumulative abnormal returns (CARs) over a three-day event window around the acquisition announcement date. CARs measure the effects on shareholder value of an acquisition, as assessed by the market, relative to prior expectations. Hence, a positive CAR does not necessarily indicate that the acquisition was a good one. SPAC deals may still be value-destroying, but not as value-destroying as the market expected. The univariate results are reported in Table 5. Upon the acquisition announcement, SPACs exhibit a statistically significant average CAR of 1.5%, for the sample of completed acquisitions. I next examine the subsample of withdrawn acquisitions and find that the market reaction to these deals is insignificantly different from zero. CARs of completed deals are, on average, 1.4% higher relative to the CARs of withdrawn deals, although the difference is not statistically significant. The market reaction to all 118 acquisitions shows an average CAR of 1%. This result is consistent with the findings of Tran (2010) that SPAC acquirers make better acquisitions than public acquirers with an average three-day CAR of 1.7% compared with the CAR of 0.33% of other public bidders. The result is also consistent with the findings in the literature on acquisitions of private companies that bidder shareholders gain when buying a private firm or a subsidiary but lose when purchasing a public firm (see Chang, 1998; and Fuller et al., 2002).

[Insert Table 5 near here]

One may argue that SPAC acquisitions should also be compared with reverse mergers involving shell companies, a deal structure related to but at the same time distinct from SPACs. While the SPAC is a public shell company set up to raise money via an IPO with the intent to purchase a private company within
360 a specified time period, a traditional reverse merger involves two preexisting companies (without the institutional details of SPACs), in which a private company acquires a public shell. Another difference is that a SPAC, in contrast to a reverse merger, provides substantial cash infusion and guidance to the private firm through a knowledgeable management team. Floros and Sapp (2011) show
365 that, while the average SPAC reverse merger has a positive 2.55% 11-day CAR around the acquisition announcement, the corresponding 28.94% average CAR of a shell company in a traditional reverse merger is much greater.

4.2. Trust values and trading behavior of SPACs

Table 6 reports the average premium or discount between the common stock
370 price and the pro rata trust value of SPACs at different times during their life. Average premiums are calculated using the closing price on each respective date (*First day of equity trading, Announcement date, Shareholder vote date, and Acquisition completion date*). The trust value is estimated assuming a constant rate of growth of the money invested in the trust from the IPO to the vote date.
375 Following Jenkinson and Sousa (2011), the SPACs that completed an acquisition are split according to whether the share price at the vote date is above or below the trust value, as *Good* and *Bad* acquisitions, respectively. Further, the first four columns of Table 6 present summary statistics for the whole unconditional sample (all good or all bad acquisitions), and the last four columns report results
380 only for the conditional sample of acquisitions. The conditional sample contains only those completed acquisitions (good or bad) in which the SPAC sponsors have purchased additional shares in the open market during the period from

the acquisition announcement to the shareholder vote date.¹⁵ I find that while, on average, *Good* acquisitions trade at a premium, at least at the *Shareholder*
385 *vote date* and at the *Acquisition completion date*, *Bad* acquisitions always trade at a discount. The differences in means and medians between good and bad acquisitions are statistically significant. Moreover, I find that SPAC sponsors are more likely to buy shares in the open market prior to a bad deal versus a good one. My results are consistent with the findings of Jenkinson and Sousa
390 (2011) that SPAC sponsors might be playing an important role in the approval of value-destroying acquisitions.

[Insert Table 6 near here]

4.3. *Post-acquisition stock performance*

Having shown that on average the announcements of acquisitions by SPAC
395 acquirers are received positively by the market, even though significant cross-sectional variation exists in their quality, I next examine the long-run share price performance of SPAC acquisitions. In Panel A of Table 7, I report the buy-and-hold stock returns for several sub-periods after the effective date of the merger and between the merger announcement and the merger effective date,
400 as well as for the whole period from the merger announcement until a year after the acquisition was completed. I find no significant difference in the general market performance and the performance of the new merged company over the period between the merger announcement and the merger effective date. The average return on SPACs is 4.4%, compared with the Russell 2000 index return
405 of 2.2% for the same period. After the merger completion, however, the average performance of the merged company starts to deteriorate dramatically. Mean and median returns for the new merged company are negative in all subsequent periods and always significantly less than the market returns. For the 71 firms

¹⁵Jenkinson and Sousa (2011) find some evidence that SPAC sponsors of bad acquisitions are making sure bad deals are being approved by buying shares, just prior to the vote date, from investors who have indicated that they will vote against the deal.

in the sample, the one-year post-merger return data show total mean (median)
410 returns of -41.0% (-58.9%), compared with the market returns of -1.3% (-5.2%).
These figures provide strong evidence that investing in SPAC acquisitions has
been harmful to shareholders' wealth, on average. Moreover, the performance
for the two-year period following the merger completion is even worse, with
an average buy-and-hold return of -56.3% compared with a 1.4% return of the
415 market.

[Insert Table 7 near here]

The significant post-merger under-performance of SPAC acquisitions is much
worse compared with the findings of previous literature on the long-term perfor-
mance of mergers. For example, Agrawal et al. (1992) examine 937 U.S. mergers
420 from 1955 to 1987 and find that mergers are followed by significant abnormal
returns of -1.5% over a year and -10.3% over a five-year period after the effec-
tive date. In more recent evidence for 12,023 acquisitions from 1980 to 2001,
Moeller et al. (2003) find three-year abnormal buy-and-hold returns of -16% for
the whole sample. In addition, they find that acquirers of private targets are the
425 worst long-term performers, with three-year abnormal buy-and-hold returns of
-26.5%. SPACs performance is also worse relative to the performance of reverse
mergers involving other blank-check companies. For instance, Lee et al. (2014)
compare Chinese reverse mergers with U.S. reverse mergers and find that, on
average, the former earn 32% (13%) market adjusted buy-and-hold returns one
430 year (two years) following the merger; the latter, 5% (-7%).

Panel B of Table 7 provides further evidence on the long-run stock price
performance of firms in my sample using an alternative benchmark constructed
from a sample of matching firms. The sample consists of firms in the same
industry [four-digit Standard Industrial Classification (SIC) code] closest in size
435 to the SPAC merged company. As illustrated in the table, the firms in the
sample also under-perform the industry benchmark by a large margin: SPAC
acquisitions one-year average returns are -44.7% versus 19.8% for the matched
firms. Similarly, their performance for the whole period from the merger an-

nouncement until a year after the acquisition is completed is significantly worse
440 than that of their matching counterparts.

Given that SPACs are viewed as a hybrid between an IPO and a merger
transaction, I compare the performance of SPACs with the post-IPO perfor-
mance of all other companies that have completed an initial public offering in
the same year as the SPAC IPO. The results are reported in Panel C of Table
445 7. They show that, on average, SPACs are performing significantly worse than
their IPO counterparts. For example, four years after the SPAC IPO, they have
an average buy-and-hold return of -51.9% compared with 8.5% of other newly
public firms.

I reach the same conclusion when I compare my findings with the findings
450 of other studies on post-IPO performance. For example, Loughran and Ritter
(1995) in their sample of 4,082 IPOs, conducted between 1970 and 1990, report
one-year average raw returns of 1.6%, compared with 6.1% of their benchmark.
The IPO-adjusted returns in my sample appear to be similar to those reported
by Brown et al. (2005), who show that roll-up IPOs also under-perform the
455 market, with an average total return of -7.45%, after two years, compared with
market returns of 46.93%.

Although the performance of SPACs is substantially worse than that of al-
ternative benchmarks, not all SPAC transactions in my sample perform poorly.
In fact, some of them outperform their benchmarks by large margins. In Section
460 5, I examine whether the structure of the firm at the time of the acquisition
announcement is related to the SPAC subsequent performance.

4.4. Post-acquisition operating performance and valuation

In this subsection, I study the operating performance and valuation of SPACs
following an acquisition. Panel A and Panel C of Table 8 contain data on
465 industry-adjusted, matched firm-adjusted, and IPO firm-adjusted profitability
one and two years following the acquisition, respectively. I make industry ad-
justments by subtracting the median ratio of all firms that operate in the same
four-digit SIC code, as defined by Compustat. I perform matched firm adjust-

ments by subtracting the correspondent measures of firms in the same industry
470 (four-digit SIC code) closest in size to the SPAC merged company. Lastly, the
IPO firm adjustment is done by subtracting the median ratio of all firms that
performed an IPO in the same year as the SPAC acquisition.¹⁶

[Insert Table 8 near here]

I report data on two profitability measures: operating profits divided by
475 sales and net income divided by sales. The first measure, operating return
on sales, shows a significant difference in the accounting performance between
SPACs and the various benchmarks used. The second measure, return on sales,
provides further evidence that SPACs have significantly lower post-acquisition
performance relative to other firms in their industry, matched peers, or newly
480 public firms. The results indicate that one year or two years following the
acquisition SPACs have not only poor stock price performance, but also poor
operating performance.

Previous literature studying post-acquisition operating performance finds
mixed results. For example, Ghosh (2001), who uses firms matched on pre-
485 acquisition performance and size as a benchmark, finds no evidence that oper-
ating performance improves following acquisitions. Healy et al. (1992), using
industry-median firms as a benchmark, conclude that cash flow performance
improves following acquisitions.

Again, comparing the post-acquisition operating performance of SPACs with
490 the post-IPO performance of companies that have completed an initial public
offering is useful. Although, consistent with previous studies on IPOs, I find
a significant decline in the operating performance of SPACs following the ac-

¹⁶All variables reported in Tables 8 and 9, except the price-to-earnings ratios, are winsorized at 5%. The results are stronger if I winsorize at 1%. The results remain qualitatively unchanged if I match firms by size and book-to-market ratios. They are also consistent if I use alternative measures of profitability such as earnings before interest, taxes, depreciation, and amortization (EBITDA) / total sales, net cash flow / total sales, EBITDA / total assets, and net cash flow / total assets.

quisition, I also find that their performance is significantly worse than that of traditional IPOs (see Jain and Kini, 1994; and Mikkelson et al., 1997).

495 When examining the operating performance of SPAC acquisitions, their capital structure also should be taken into consideration. SPAC acquisitions could be more levered and have higher financial distress costs, which affects their operating performance. In Panel B and Panel D of Table 8, I report the industry-, matched firm-, and IPO firm-adjusted ratio of long-term debt to assets, cash
500 to assets, and net long-term debt to assets one year and two years following the acquisition, respectively. The results suggest that firms in my sample do have a higher level of leverage relative to the median firm in their industries and the median firm that became public in the same year. Nevertheless, SPAC acquisitions appear to have significantly larger cash holdings compared with
505 the median industry and IPO firm. When I take into account the level of cash that each company holds, I find that SPAC acquisitions are as levered as their counterparts. Only when compared with other IPO firms do SPAC acquisitions appear to have a higher, and statistically significant, average net long-term debt to assets ratio. Moreover, the results in Panel D of Table 8 show that in the long
510 run SPACs increase their debt level and that, two years after the acquisition, SPACs deals are more levered compared with their matched counterparts.

Given that SPACs are relatively new financial vehicles, investors might not understand all the risks involved with investment in such funds or their belief in the expertise of SPAC founders could be too high, or both. I thus examine
515 whether the initial valuations of SPAC acquisitions imply high anticipated profit growth relative to other firms in the industry. For this purpose, I compute the Tobin's Q, earnings-to-price (E/P) ratio, and price-to-earnings (P/E) ratio.

Panel A of Table 9 reports statistics on industry-adjusted, matched firm-adjusted, and IPO firm-adjusted firm valuation ratios one year after the acquisition was completed. The Tobin's Q ratio of the SPACs is either not significantly
520 different or significantly lower than that of the alternative benchmarks. However, their E/P ratio in the first year after the merger is significantly below all

benchmarks.¹⁷ The finding suggests that SPAC valuations were not higher than those of various benchmarks. However, comparing the anticipated profit growth of SPACs at the time of the merger completion, instead of a year later, might
525 be useful. Therefore, in Panel B of Table 9, I report the firm valuation ratios of SPACs at the time of the merger. Although the results are weak, they give some indication that at least initially SPAC acquisitions were valued higher relative to some benchmarks and relative to their own valuations a year later.

530 [Insert Table 9 near here]

In summary, the findings from this section imply that SPACs' accounting performance in the year following the acquisition is worse than that of their industry peers. In addition, SPACs do not seem to be more levered and, at least initially, investors had higher valuations of SPACs and were expecting
535 them to perform better.

5. Cross-sectional determinants of stock returns

So far, I have shown that although the announcements of SPAC acquisitions are received positively by the market, SPACs, in aggregate, deliver poor stock returns in the years following the acquisition. In this section, I examine the
540 deal- and firm-specific characteristics that help determine whether particular SPAC acquisitions are successful or not. For a dependent variable, I first use the IPO-adjusted buy-and-hold return earned by SPACs over a four-year period following the SPAC IPO date. I then study the short-run performance, measured by the three-day event window cumulative abnormal return around the
545 acquisition announcement date. I seek to explain the cross-sectional variation in performance by focusing on factors related to the conflicts of interest between various parties involved in the SPAC acquisition, corporate governance of the merged firms, and other deal characteristics.

¹⁷Given that 60% of the E/P ratios of the sample have negative values, I also report the P/E ratios only for the firms with positive earnings.

The time from the IPO to the acquisition announcement may have an impact
550 on SPAC returns. SPACs have a maximum of two years from the time of their
IPO to acquire another company or otherwise they have to liquidate and return
the money to the investors. Knowing that they have to close an acquisition to
collect their compensation, and being pressured under the two-year time con-
straints, SPAC founders might be encouraged to make unsuitable acquisitions.
555 SPAC performance may vary depending on how much time it takes for a SPAC
to find the right target. SPAC deals that are announced closer to the deadline
of an acquisition completion might be perceived positively or negatively by the
market. On one hand, SPACs that take a longer time to announce an acqui-
sition are potentially putting more effort and time in finding the best suitable
560 target and conducting thorough due diligence. This could be reflected in a posi-
tive performance. On the other hand, deals announced by SPACs close to the
acquisition deadline may be seen as last-minute opportunistic deals and may
receive a negative market reaction. For instance, Axelson et al. (2009) argue
that PE fund managers have a strong incentive to overpay for transactions oc-
565 ccurring toward the end of the fund's investment period as they prefer to spend
all of the capital committed before losing it at the end of the fixed investment
period (which is usually five years).

The continued involvement of the SPAC IPO underwriters in the follow-
up acquisition process of the company may also affect the SPAC performance.
570 Given that part of the underwriting fees is deferred and paid to the underwrit-
ers only upon acquisition completion, the underwriters have an incentive to get
involved in the merger process and influence the purchase decision of the SPAC
managers. For example, by becoming acquisition advisers to the SPAC, un-
derwriters may follow their own private interests and recommend any possible
575 unsuitable target to close a deal and collect their deferred fees in addition to
their merger advisory fees.¹⁸ Therefore, I investigate how SPAC performance

¹⁸Lewellen (2009) reports that deferred underwriting compensation in SPAC IPOs have increased dramatically over time, from 0% in 2003 to an average of 3.8% of gross average

varies when a portion of the underwriter's compensation is deferred and paid only upon the merger completion and when the SPAC acquisition adviser is the same as its IPO underwriter. In addition, I study how performance is affected
580 when the IPO underwriter becomes the SPAC acquisition adviser, conditional on there being deferred underwriting fees.

One of the requirements of the SPAC contract stated in the IPO prospectus is that the initial target business that the SPAC acquires must have a fair market value equal to at least 80% of the SPAC's net assets at the time of the
585 acquisition. The rationale behind this rule is that the money is raised for the purpose of making an acquisition, not to provide the SPAC with proceeds for general corporate purposes or to turn it into an investment fund. However, this requirement may also give SPAC sponsors the wrong incentive to overpay for the target. In other words, the sponsors may use this 80% as an anchor in
590 their decision when they evaluate potential targets and not necessarily consider what is best for the interests of outside shareholders. They may find it more convenient to overpay for a smaller target, instead of bidding for the acquisition of a large target and diluting their ownership. I test whether SPAC performance differs for acquisitions whose value is within 10% of the required 80% threshold
595 (80% of the SPAC's net assets) at the time of the acquisition completion.

Sponsor ownership could also affect performance. The effect of a high level of SPAC sponsor ownership on corporate performance could be positive or negative. The positive effect stems from the enhancement in firm value, as increased managerial ownership decreases agency costs of equity by reducing managers'
600 consumption of perquisites (Jensen and Meckling, 1976). However, as Jenkinson and Sousa (2011) show, the enormous incentives of SPAC sponsors to complete any kind of deal may encourage the SPAC management teams and related parties to purchase large blocks of stock on the open market just prior to the shareholder vote on a proposed acquisition. Jenkinson and Sousa interpret this behavior as evidence that SPAC sponsors are buying shares from likely
605

proceeds in 2008.

“no” voters and are approving acquisitions to receive their promised 20% equity compensation.¹⁹ Given that the approved acquisitions are not necessarily the optimal choice, increasing sponsor ownership may have a negative effect on performance.²⁰ I also investigate whether SPAC performance is related to the
610 level of board control exercised by the sponsors. For instance, Guo et al. (2011) find that gains in operating performance of leveraged buyouts (LBOs), one of the most important types of private equity investments, are higher for deals in which the CEO is replaced during buyout completion. Similarly, Cornelli and Karakaş (2013) find that higher levels of PE sponsor involvement in the target
615 company ultimately leads to better performance. I examine three aspects of board control: (1) whether one of the sponsors provides the CEO, (2) whether one of the sponsors becomes the chairman of the board, and (3) whether the CEO is also the chairman of the board and is one of the sponsors.

The involvement of the target insiders in the management of the newly
620 merged company may also affect performance. Again, arguments can be developed to support both positive and negative effects. If the target insiders

¹⁹I review Schedule 13D and Schedule 13G, as well as Form 13F, and find that in more than 50% of the deals in my sample the sponsors report that they buy additional shares prior to the Special Meeting of Stockholders, held to consider and vote upon the proposed merger. Furthermore, in 29 deals, the sponsors enter into an agreement with Victory Park Capital Advisors, LLC, pursuant to which funds managed by Victory Park, or other purchasers acceptable to Victory Park and the sponsors, will use their reasonable best efforts to purchase up to an agreed amount of SPAC shares from third parties prior to the Special Meeting of Stockholders.

²⁰In fact, in 2010 the SEC has proposed amendments to Rule 10b-18 under the Securities Exchange Act of 1934. Rule 10b-18 provides issuers with a safe harbor from liability for manipulation when they repurchase their common stock in the market in accordance with the rule’s manner, timing, price, and volume conditions. Because the SEC recognizes the strong incentives of SPAC sponsors to make substantial purchases of their stock solely to ensure that they receive a favorable stockholder vote on the proposed acquisition, the agency has proposed excluding SPACs from the safe harbor (from the time of the public announcement of the transaction until the earlier of the completion of the transaction or the vote by both the target shareholders and SPAC shareholders).

receive proper incentives to maximize the value of the new firm, their continued involvement could prove to be beneficial because they have substantial inside knowledge of the target and the industry. For instance, in many cases, target
625 insiders are also the founders of the target company and, as pointed out by Schwert (1985), the founder is probably the most important asset of the firm at least in the early stages of the company's life. Conversely, higher target insider ownership in the merged company may be an indication that the SPAC sponsors overpaid for the acquisition. The target management and owners are well
630 aware of the fact that sponsors must spend at least 80% of the SPAC money on the purchase, within the limited time of two years. Consequently, they may use their bargaining power and extract a higher price for target shareholders. In addition, I examine whether the continued involvement of target insiders has an effect on SPAC performance by introducing three new variables: (1) whether
635 one of the target insiders provides the CEO, (2) whether one of the target insiders becomes the chairman of the board, and (3) whether the CEO is also the chairman of the board and is one of the target insiders.

The previous literature also underlines the role of institutional blockholders' monitoring as an important corporate governance mechanism. I investigate
640 whether the level of institutional ownership in the merged firm is reflected in better performance of SPAC acquisitions.²¹ I also control for two alternative measures of corporate governance: the fraction of independent directors on the board of directors and the CEO incentives measured by the number of stock options awarded to the CEO of the newly merged company. As the majority
645 of the targets in the sample are private companies, and acquisitions of private targets have been found to differ from acquisitions of public companies, I include an additional control variable: *Private target* (see Officer, 2007). I also control for the SPAC size (*SPAC market capitalization*), relative size (*Relative size*), medium of exchange (*Cash deal*), deal value (*Deal value*), and industry merger

²¹I introduce two alternative measures: the fraction of the firm held by institutional blockholders and the number of outside blockholders owning 5% or more shares.

650 activity (*Target's liquidity index*), as these variables have been found to have an effect on acquisition performance (see Moeller et al., 2004, 2007; Travos, 1987; and Schlingemann et al., 2002).²²

Table 10 contains the results of the regression analyses. The dependent variable in all specifications is the four-year post-IPO buy-and-hold abnormal return, adjusted for the return on all other firms that became public in the
655 same year as the SPAC IPO. Model (1) shows the effect of the time from IPO to the acquisition announcement variable, as well as the effect of deferred IPO underwriter fees, controlling for ownership, governance, deal, and SPAC characteristics.²³ In model (2), I introduce a dummy of SPAC underwriter being also
660 the SPAC acquisition adviser and an interaction dummy that captures the effect of a SPAC underwriter becoming an acquisition adviser, conditional on there being deferred underwriting fees. In the following models, I include a dummy that reflects whether the value of the target at the time of the acquisition was within 10% of the required 80% threshold of the SPAC's net asset value. In some
665 specifications, I include industry fixed effects as additional control variables.

[Insert Table 10 near here]

I find evidence of an inverted U-shaped relationship between the time it takes for SPAC sponsors to find a potential target and SPAC performance. In other words, the longer it takes for the SPAC to announce an acquisition, the

²²Skewed variables, such as *SPAC market capitalization* and *Deal value*, are transformed using natural log transformation. Results are consistent if started-log transformation is used instead. It is important to also control for deal characteristics (whether the deal was a tender offer or hostile, or whether there were multiple bidders) when examining the short- and long-term performance of SPAC acquisitions. However, after further analysis, I find that there is only one tender offer in the whole sample and all of the deals involve friendly mergers. Moreover, no evidence exists of multiple bidders, which is not surprising given that most of the deals involve private targets (deals usually done through private negotiations, versus public auctions, which is the case for public targets).

²³Because *CEO duality from sponsor* (*CEO duality from target insider*) is highly correlated with *CEO is a sponsor* (*CEO is a target insider*), I include only one at a time.

670 higher are the stock returns, as the sponsors are potentially putting in more
time to conduct thorough due diligence and purchase the most suitable target.
However, acquisitions that are announced too quickly or too late are perceived
by the market as less valuable and have worse performance. Given the strong
incentive of sponsors to buy a target, they can either purchase a target as soon
675 as possible after the SPAC IPO or make a last-minute acquisition under the
pressure of the approaching two-year deadline date. My results are economically
significant. The four-year post-IPO buy-and-hold abnormal return is on average
(across various specifications) 8.8% lower if the acquisition is announced at the
end of the two-year deadline instead of at the optimal time. The results are
680 consistent with the go-for-broke hypothesis of Axelson et al. (2009) and with
the findings of Degeorge et al. (2013) that secondary buyouts (SBOs) made late
in the investment period under-perform other SBOs.

The coefficient estimates on the *Deferred fees* and *Underwriter is adviser*
variables are both negative and statistically significant. A possible interpreta-
685 tion of the less favorable performance of these acquisitions is that the deferred
underwriter fees may create the wrong incentives for the IPO underwriters.
SPAC underwriters, who have not collected the full amount of their fees, can
get involved in the merger process following their own private interests that
may not necessarily be aligned with the interests of the SPAC shareholders and
690 push for any potential deal. Moreover, the Background of the Merger section
in the DEFM 14A statements shows that, in fact, it is not uncommon that the
underwriter as adviser is the one who finds the potential target and introduces it
to the SPAC sponsors. My results suggest that buy-and-hold abnormal returns
are, on average, 47.9 percentage points lower for SPACs when part of the com-
695 pensation of the IPO underwriter is deferred and paid upon successful merger
completion. When I add the interaction dummy that captures the effect of a
SPAC underwriter becoming an acquisition adviser, conditional on there being
deferred underwriting fees, I find the opposite effect.

While SPAC performance appears to be independent of the *80% deal* and
700 target ownership variables, I find some evidence that the continued involvement

of SPAC sponsors as shareholders and board members has an impact on the long-term performance of SPAC acquisitions. Higher sponsor ownership leads to worse SPAC performance. Sponsors may be approving value-destroying acquisitions, to obtain their compensation, by buying additional shares in the open market. Further, deals in which the sponsors ended up holding a significant portion of the newly merged company may also reflect deals in which the sponsors bought smaller targets (but not necessarily more valuable targets) because they did not want to issue more shares and dilute their ownership. Sponsors' board representation, meanwhile, seems to have a positive effect on performance. The long-run returns are at least 57 percentage points higher after adjusting for industry movements, if one of the SPAC sponsors is appointed as a chairman of the merged company. These findings underline the importance of continuing sponsor involvement. While their expertise may matter during the search for a suitable target and the execution of the acquisition, the results suggest that sponsors may add value by monitoring the newly merged company, at least initially after the acquisition. My findings are consistent with previous literature that shows the importance of individuals' superior characteristics for firm performance and with the PE literature that finds monitoring advice and involvement of PE sponsors to be even more effective than CEO turnover or separation of CEO and chairman of the board in improving performance of the target company (see Bertrand and Schoar, 2003; Kaplan et al., 2012; Cornelli and Karakas, 2013; and Weir et al., 2005a).

Lastly, some regression models show that the ownership of the institutional blockholders has a negative effect on performance. These results are in contrast with the findings of Tran (2010). He examines the acquisition discount obtained by SPAC bidders at the time of the acquisition and finds that the higher the level of independent long-term institutional blockholders, the larger is the discount.²⁴ His interpretation is that institutional blockholders act as a monitoring

²⁴It is important to highlight the differences between my and Tran's identification techniques. First, Tran (2010) examines the effect of institutional ownership on the acquisition

device and potentially mitigate the perverse incentives of the sponsors to make
730 unsuitable acquisitions. I, however, find that institutional ownership has a neg-
ative and significant effect on the long-term stock performance. The long-run
buy-and-hold abnormal returns are on average between 8.3 and 9.6 percentage
points lower, for every 10% increase in institutional ownership, depending on
the specification used. In the last column of Table 10, I divide the institutional
735 ownership in two separate variables: the ownership of the original institutions,
which bought shares at the time of the IPO, and the ownership of the new in-
stitutional holders, which bought at the merger completion or between the IPO
and the merger completion. The coefficient estimates on both variables remain
negative. However, both are statistically insignificant.

740 Institutional investors in SPAC acquisitions typically are represented by
hedge funds. Unfortunately, the lack of disclosure limits the quantitative data
available on hedge funds and constrains my empirical investigation. In an at-
tempt to shed some light on the interests of institutional investors in SPAC
transactions, I examine what their intentions are based on the information re-
745 ported in Item 4 of Schedule 13D. For instance, Brav et al. (2008) argue that
hedge funds are better positioned to act as informed monitors than other institu-
tional investors, because they are subject to less regulation and their managers
have few conflicts of interest. In addition, according to their findings, hedge
fund activists are not short term in focus, as some critics have claimed, and,
750 based on their sample, the holding period of hedge funds is closer to 20 months.

However, after reading Schedule 13D filed with the SEC, I do not find evi-
dence that hedge funds' interest is to force changes or seek control at SPACs.
The information in Item 4 of Schedule 13D, which requires the filer to declare

discount, while I consider the effect of institutional ownership on the long-term stock per-
formance of SPAC acquisitions. Second, he studies only the effect of independent long-term
institutional blockholdings, obtained one quarter before the merger announcement, while I
examine the effect of total institutional ownership, measured at the time of the acquisition
completion.

its reasons for acquiring the shares, suggests that in a majority of the cases
755 institutional investors acquired shares for investment reasons only.²⁵ Further,
I find that institutional investors in SPACs are invested for a short period of
time. Initial investors owned on average 29% at the time of the IPO, 20% at
the time of the merger completion, and only 13% one year after the merger was
completed. These results suggest that the initial investors are mainly interested
760 in short-term investment. In other words, the negative effect of institutional
ownership on the long-term performance could be explained by the downward
pressure that the exit of hedge funds has on price. My results are consistent
with the findings of Mitchell and Pulvino (2012) that during the financial crisis
of 2007–2009, when debt financing was pulled from arbitrage hedge funds and
765 the substantial uncertainty in the market led to a significant increase in investor
redemptions, hedge funds were forced to liquidate their existing positions.

In Table 11, I continue my analysis by estimating similar regressions to
those reported in Table 10 but replace the dependent variable with the three-
day event window CAR measured around the acquisition announcement date,
770 using Russell 2000 index as a market proxy. Columns 1 to 6 report results only
for the sample of completed acquisitions, and column 7 shows results for the
whole sample (completed and withdrawn acquisitions). Overall, the results are
similar to my previous findings, with a few exceptions.²⁶ I now find that SPAC
acquisitions that have a market value very close to the required 80% threshold
775 have worse performance. CAR is on average 6.3 percentage points lower if the
deal is close to the 80% threshold. Although these deals are satisfying the 80%
test, the market seems to perceive them as lower quality acquisitions. SPAC
sponsors, aware of the 80% requirement necessary for the acquisition approval,
could be given the wrong incentives to deviate from their optimal choice, overpay

²⁵In fact, some hedge fund investors report that they have bought shares in the SPAC
acquisition to benefit from event-, risk-, or merger-arbitrage strategies.

²⁶The results remain qualitatively unchanged when I include year fixed effects in the regres-
sions.

780 for a smaller target, complete an acquisition, and collect their compensation. Further, in these new regressions, I find that the coefficient estimates of the *Underwriter is adviser* variable and of the interaction dummy that captures the effect of a SPAC underwriter becoming an adviser, conditional on there being deferred fees, are no longer statistically significant. In other words, what
785 appears to drive the results is whether a part of the fees of the IPO underwriters is being deferred and paid conditional on a merger completion.

[Insert Table 11 near here]

Overall, the findings reported in Tables 10 and 11 indicate that important cross-sectional differences exist in the long-run stock performance, as well as
790 in the short-run stock performance around the acquisition announcement of SPACs in my sample. If SPAC sponsors take a long time to find a target or a portion of the IPO underwriting fees is being deferred and paid conditionally on a successful merger completion, then the firms under-perform following the acquisition announcement. The market reaction is also significantly negative for
795 acquisitions that have a market value very close to the required 80% threshold. Further, too high ownership retention by sponsors can be detrimental for the long-term performance of the merged company. These results show that the perverse incentives of sponsors may wrongly incentivize them to buy unsuitable targets. SPACs that appoint a sponsor as a chairman, however, perform better,
800 consistent with the valuable expertise and the importance of continuing, to a certain extent, sponsor involvement.

6. Concluding remarks

The special purpose acquisition company is a financial innovation whose unique public form of the private equity contract allows more light to be shed on
805 the classic financial contract between private equity investor and the manager. In this paper, I study how the traditional private equity mechanisms included in the SPAC contract, most notably the incentive-based compensation of managers, the time limit on managers' use of funds, and the limits on the amount

managers can invest, affect the performance of SPACs. I study the stock price
810 reaction to SPAC acquisitions at the time of the acquisition announcement, as
well as their long-term stock and accounting performance.

While the announcements of acquisitions by SPAC acquirers are received
positively by the market, on average these acquisitions under-perform in the
long run. The results of the accounting performance of SPACs also suggest that
815 they significantly under-perform their various benchmarks. Further, while SPAC
acquisitions do not appear to be more levered, they do fall short of investors'
expectations given that they are sold and initially trade at higher valuations
relative to their peers.

Substantial cross-sectional variation exists in SPAC performance. I docu-
820 ment that the perverse incentives embedded in the SPAC contract may encour-
age some SPAC sponsors and underwriters to make bad acquisitions to collect
their equity compensation and defer underwriting fees, respectively. I also find
that the continued involvement of SPAC sponsors as shareholders and board
members in the new company influences future performance.

825 Given the recent trend in the PE industry toward alternative, more flexible
structures of fund-raising, the popularity of SPAC transactions is likely to re-
main. However, the evidence of this paper suggests that as long as alternative
deal-by-deal structures are not better at aligning the interests of managers and
investors, they will not fix the problems of the PE industry.

830 **References**

- [1] Agrawal, A., Jaffe, J., Mandelker, G., 1992. The post-merger performance of acquiring firms: A re-examination of an anomaly. *J. Financ.* 47, 1605–1622.
- [2] Axelson, U., Strömberg, P., Weisbach, M., 2009. Why are buyouts levered?
835 The financial structure of private equity funds. *J. Financ.* 64, 1549–1582.
- [3] Berger, R., 2008. SPACs: An alternative way to access the public markets. *J. Appl. Corp. Financ.* 20, 68–76.
- [4] Bertrand, M., Schoar, A., 2003. Managing with style: The effect of managers on firm policies. *Q. J. Econ.* 118, 1169–1208.
- [5] Brav, A., Jiang, W., Partnoy, F., Thomas, R., 2008. Hedge fund activism, corporate governance, and firm performance. *J. Financ.* 63, 1729–1775.
840
- [6] Brown, K., Dittmar, A., Servaes, H., 2005. Corporate governance, incentives, and industry consolidations. *Rev. Financ. Stud.* 18 (1), 241–270.
- [7] Chang, S., 1998. Takeovers of privately held targets, methods of payment, and bidder returns. *J. Financ.* 53, 773–784.
845
- [8] Chen, H., Ritter, J., 2000. The seven percent solution. *J. Financ.* 55, 1105–1131.
- [9] Cornelli, F., Karakaş, O., 2013. Corporate governance of LBOs: The role of boards. Working paper.
- [10] Cumming, D., Hass, L., Schweizer, D., 2014. The fast track IPO–success factors for taking firms public with SPACs. *J. Bank. Financ.* 47, 198–213.
850
- [11] Degeorge, F., Martin, J., Phalippou, L., 2013. The performance of secondary buyouts. Working paper.
- [12] Field, L., Hanka, G., 2001. The expiration of IPO share lockups. *J. Financ.* 56, 471–500.
855

- [13] Floros, I., Sapp, T., 2011. Shell games: On the value of shell companies. *J. Corp. Financ.* 17, 850–867.
- [14] Fuller, K., Netter, J., Stegemoller, M., 2002. What do returns to acquiring firms tell us? Evidence from firms that make many acquisitions. *J. Financ.* 57, 1763–1793.
- 860 [15] Ghosh, A., 2001. Does operating performance really improve following corporate acquisitions? *J. Corp. Financ.* 7, 151–178.
- [16] Gompers, P., Metrick, A., 2001. Institutional investors and equity prices. *Q. J. Econ.* 116, 229–259.
- 865 [17] Guo, S., Hotchkiss, E., Song, W., 2011. Do buyouts (still) create value? *J. Financ.* 66, 479–517.
- [18] Healy, P., Palepu, K., Ruback, R., 1992. Does corporate performance improve after mergers? *J. Financ. Econ.* 31, 135–175.
- [19] Heyman, D., 2007. From blank check to SPAC: The regulator’s response to the market, and the market’s response to the regulation. *Entrep. Bus. Law J.* 2, 531–552.
- 870 [20] Howe, J., O’Brien, S., 2012. SPAC performance, ownership, and corporate governance. *Adv. Financ. Econ.* 15, 1–14.
- [21] Hsieh, J., Wang, Q., 2008. Shareholder voting rights in mergers and acquisitions. Working paper.
- 875 [22] Jacobides, M., Saaverda, J., 2015. The shifting business model of private equity: Evolution, revolution, and trench warfare. ADVEQ Applied Research Series Report.
- [23] Jain, B., Kini, O., 1994. The post-issue operating performance of IPO firms. *J. Financ.* 49, 1699–1726.
- 880

- [24] Jenkinson, T., Sousa, M., 2011. Why SPAC investors should listen to the market. *J. Appl. Financ.* 21 (2), 38–57.
- [25] Jensen, M., Meckling, W., 1976. Theory of the firm: Managerial behavior, agency costs, and ownership structure. *J. Financ. Econ.* 3, 305–360.
- 885 [26] Jog, V., Sun, C., 2007. Blank-check IPOs: A home run for management. Working paper.
- [27] Kaplan, S., Klebanov, M., Sorensen, M., 2012. Which CEO characteristics and abilities matter? *J. Financ.* 67, 973–1007.
- [28] Lakicevic, M., Shachmurove, Y., Vulcanovic, M., 2013. On mergers, ac-
890 quisitions, and liquidations using specified acquisition purpose companies (SPACs). Working paper.
- [29] Lakicevic, M., Vulcanovic, M., 2013. A story on SPACs. *Manag. Financ.* 39, 384–403.
- [30] Lee, C., Li, K., Zhang, R., 2015. Shell games: The long-term performance
895 of Chinese reverse merger firms. *Account. Rev.* 90, 1547–1589.
- [31] Lewellen, S., 2009. SPACs as an asset class. Working paper.
- [32] Lin, C., Officer, M., Zou, H., 2011. Directors’ and officers’ liability insurance and acquisition outcomes. *J. Financ. Econ.* 102, 507–525.
- [33] Loughran, T., Ritter, J., 1995. The new issues puzzle. *J. Financ.* 50, 23–51.
- 900 [34] Loughran, T., Ritter, J., 2002. Why don’t issuers get upset about leaving money on the table in IPOs? *Rev. Financ. Stud.* 15 (2), 413–444.
- [35] Mikkelson, W., Partch, M., Shah, K., 1997. Ownership and operating performance of companies that go public. *J. Financ. Econ.* 44, 281–307.
- [36] Mitchell, M., Pulvino, T., 2012. Arbitrage crashes and the speed of capital.
905 *J. Financ. Econ.* 104, 469–490.

- [37] Moeller, S., Schlingemann, F., Stulz, R., 2003. Do shareholders of acquiring firms gain from acquisitions? Working paper. National Bureau of Economic Research.
- [38] Moeller, S., Schlingemann, F., Stulz, R., 2004. Firm size and the gains from
910 acquisitions. *J. Financ. Econ.* 73, 201–228.
- [39] Moeller, S., Schlingemann, F., Stulz, R., 2007. How do diversity of opinion and information asymmetry affect acquirer returns? *Rev. Financ. Stud.* 20, 6, 2047–2078.
- [40] Officer, M., 2007. The price of corporate liquidity: Acquisition discounts
915 for unlisted targets. *J. Financ. Econ.* 83, 571–598.
- [41] Rodrigues, U., Stegemoller, M., 2013. Exit, voice, and reputation: The evolution of SPACs. *Del. J. Corp. Law* 37, 849–927.
- [42] Rodrigues, U., Stegemoller, M., 2014. What all-cash companies tell us about IPOs and acquisitions. *J. Corp. Financ.* 29, 111–121.
- [43] Savitz, E., 2005. The new blind pools. *Barron's*.
920 <http://www.barrons.com/articles>.
- [44] Schlingemann, F., Stulz, R., Walkling, R., 2002. Divestitures and the liquidity of the market for corporate assets. *J. Financ. Econ.* 64, 117–144.
- [45] Schwert, W., 1985. A discussion of CEO deaths and the reaction of stock
925 prices. *Journal of Accounting and Economics* 7, 175–178.
- [46] Sjostrom, W., 2008. The truth about reverse mergers. *Entrep. Bus. Law J.* 2, 231–247.
- [47] Tran, A., 2010. Blank check acquisitions. Working paper.
- [48] Travos, N., 1987. Corporate takeover bids, methods of payment, and bid-
930 ding firms stock return. *J. Financ.* 42, 943–963.

- [49] Weir, C., Laing, D., Wright, M., 2005. Incentive effects, monitoring mechanisms, and the threat from the market for corporate control: An analysis of the factors affecting public to private transactions in the UK. *J. Bus. Financ. Account.* 32, 909–944.

Figure 1:
Volume of SPACs and traditional IPOs.

Panel A shows the total number of special purpose acquisition companies (SPACs), traditional initial public offerings (IPOs), and public equity (PE) funds in the U.S. from 2003 to 2014. Panel B shows the dollar value of all SPACs, traditional IPOs, and PE fund-raising in the U.S. from 2003 to 2014.

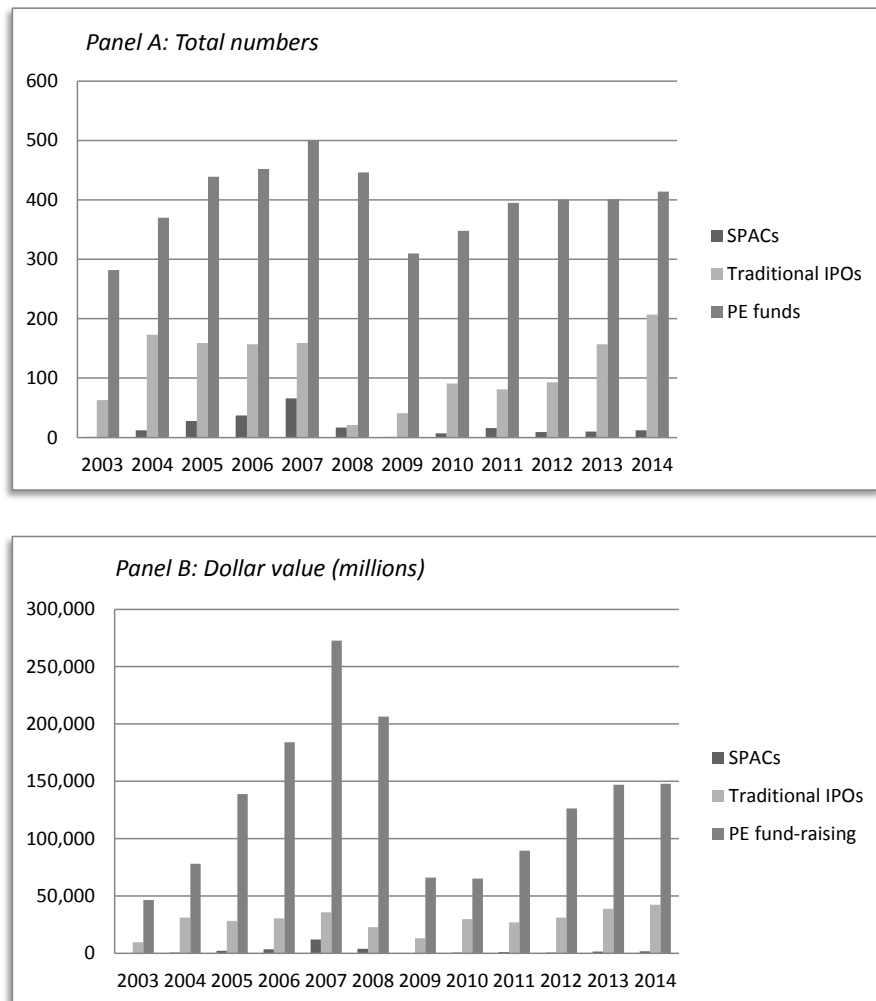


Figure 2:
The evolution of private equity fund structure.

This figure shows the percentage of alternative structures of private equity (if not a limited partnership) that general partners expect to see an increase in over the next three years. The source of the data is Grant Thornton's *Global Private Equity Report 2013/2014*, which is compiled from 156 in-depth interviews with senior private equity practitioners around the globe.

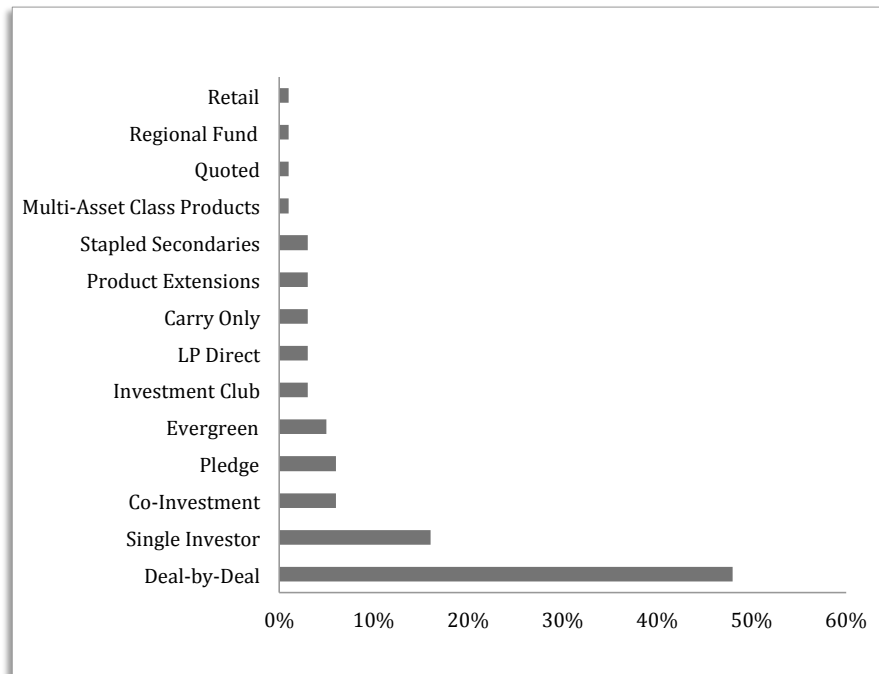


Table 1.
Sample of completed acquisitions by a SPAC acquirer

The sample acquisitions are listed in order of the S-1 filing date of the special purpose acquisition company (SPAC).

SPAC	S-1 date	Target	M&A date
Millstream Acquisition Corp.	August 25, 2003	NationsHealth Holdings LLC	September 1, 2004
CEA Acquisition Corp.	February 12, 2004	Etrials Worldwide Inc.	February 9, 2006
Chardan China Acquisition Corp.	March 16, 2004	State Harvest Holdings Ltd.	November 8, 2005
Great Wall Acquisition Corp.	March 17, 2004	ChinaCast Communication Holdings Ltd.	January 18, 2007
Tremis Energy Acquisition Corp.	May 12, 2004	RAM Energy Inc.	May 8, 2006
Arpeggio Acquisition Corp.	June 24, 2004	Hill International Inc.	June 28, 2006
Rand Acquisition Corp.	October 27, 2004	Lower Lakes Towing Ltd.	March 6, 2006
China Unistone Acquisition Corp.	November 18, 2004	Beijing e-Channels Century	January 2, 2006
Mercator Partners Acquisition Corp.	April 11, 2005	European Telecommunications & Technology Ltd.	October 16, 2006
Terra Nova Acquisition Corp.	April 18, 2005	ClearPoint Business Resources Inc.	February 12, 2007
KBL Healthcare Acquisition Corp. II	April 21, 2005	Summer Infant Inc.	March 6, 2007
Services Acquisition Corp.	June 29, 2005	Jamba Juice Co.	November 29, 2006
Courtside Acquisition Corp.	June 30, 2005	American Community Newspapers LLC	July 2, 2007
Oakmont Acquisition Corp.	July 12, 2005	Brooke Credit Corp.	July 18, 2007
Israel Technology Acquisition Corp.	July 12, 2005	IXI Mobile Inc.	June 6, 2007
Fortress America Acquisition Corp.	July 13, 2005	VTC LLC	January 19, 2007
Juniper Partners Acquisition Corp.	July 13, 2005	Firestone Communications Inc.	January 19, 2007
Echo Healthcare Acquisition Corp.	July 15, 2005	XLNT Veterinary Care Inc.	January 7, 2008
Healthcare Acquisition Corp.	July 28, 2005	PharmAthene Inc.	August 7, 2007
Chardan North China Acquisition Corp.	August 2, 2005	Beijing HollySys Co. Ltd.	September 20, 2007
Stone Arcade Acquisition Corp.	August 15, 2005	Kraft Papers Business	January 2, 2007
Ithaka Acquisition Corp.	August 17, 2005	Alsuis Corp.	June 25, 2007
Ad.Venture Partners Inc.	August 25, 2005	180 Connect Inc.	August 24, 2007
Chardan South China Acquisition Corp.	September 2, 2005	Head Dragon Holdings Ltd.	January 24, 2008
Coconut Palm Acquisition Corp.	September 8, 2005	Equity Broadcasting Corp.	April 2, 2007
Viceroy Acquisition Corp.	October 13, 2005	Eastman SE Inc.	November 1, 2006
Federal Services Acquisition Corp.	October 19, 2005	Advanced Technology Systems Inc.	January 16, 2007
Paramount Acquisition Corp.	October 21, 2005	Chem Rx Corp.	October 26, 2007
Platinum Energy Resources Inc.	October 24, 2005	Tandem Energy Corp.	October 26, 2007
Endeavor Acquisition Corp.	December 15, 2005	American Apparel Inc.	December 12, 2007
Star Maritime Acquisition Corp.	December 15, 2005	Star Bulk Carriers Corp.	November 27, 2007
Boulder Specialty Brands Inc.	December 16, 2005	GFA Holdings Inc.	May 21, 2007
Argyle Security Acquisition Corp.	January 24, 2006	ISI Detention Contracting Group Inc.	July 31, 2007
Global Logistics Acquisition Corp.	February 15, 2006	Clark Group Inc.	February 13, 2008
India Globalization Capital Inc.	March 3, 2006	Sritcon Infrastructure Private Ltd.	March 7, 2008

(Continue)

Table 1– Continued

SPAC	S-1 date	Target	M&A date
Acquiror Technology Inc.	March 15, 2006	Jazz Semiconductor Inc.	February 20, 2007
Asia Automotive Acquisition Corp.	April 11, 2006	Hunan TX Enterprise Co. Ltd.	April 23, 2008
Global Services Partners Acquisition Corp.	April 18, 2006	Southpeak Interactive LLC	May 14, 2008
Community Bankers Acquisition Corp.	June 5, 2006	TransCommunity Financial Corp.	May 31, 2008
Marathon Acquisition Corp.	August 24, 2006	Global Ship Lease Inc.	August 14, 2008
Energy Services Acquisition Corp.	August 30, 2006	ST Pipeline Inc.	August 15, 2008
Freedom Acquisition Holdings Inc.	December 21, 2006	GLG Partners LP	November 2, 2007
ChinaGrowth South Acquisition Corp.	January 23, 2007	Olympia Media Holdings Ltd.	January 27, 2009
ChinaGrowth North Acquisition Corp.	January 23, 2007	UIB Group Ltd.	January 27, 2009
Information Services Group Inc.	January 31, 2007	Technology Partners International Inc.	November 16, 2007
Hyde Park Acquisition Corp.	March 5, 2007	Essex Holdings LLC	October 31, 2008
Symmetry Holdings Inc.	March 7, 2007	Novamerican Steel Inc.	November 15, 2007
China Opportunity Acquisition Corp.	March 20, 2007	Golden Green Enterprises Ltd.	March 17, 2009
Vectro Intersect Security Acquisition Corp.	April 25, 2007	Cyalume Technologies Inc.	December 19, 2008
Vantage Energy Services Inc.	May 24, 2007	Offshore Group Investments Ltd.	June 12, 2008
Aldabra 2 Acquisition Corp.	June 19, 2007	Boise Cascade LLC	February 22, 2008
Alyst Acquisition Corp.	June 29, 2007	China Networks Media Ltd.	June 30, 2009
Alternative Asset Management Acquisition Corp.	August 1, 2007	Great American Group LLC	August 3, 2009
InterAmerican Acquisition Group Inc.	September 4, 2007	Sing Kung Ltd.	September 9, 2009
Hicks Acquisition Co. I Inc.	September 28, 2007	Resolute Natural Resources Co.	September 25, 2009
FMG Acquisition Corp.	October 4, 2007	United Insurance Holdings LLC	September 30, 2008
TM Entertainment & Media Inc.	October 17, 2007	Hong Kong Mandefu Holdings Ltd.	October 15, 2009
Global BPO Services Corp.	October 17, 2007	Stream Holdings Corp.	July 31, 2008
Triplecrown Acquisition Corp.	October 22, 2007	Cullen Agricultural Technologies Inc.	October 2, 2009
Secure America Acquisition Corp.	October 23, 2007	Ultimate Escapes Holdings LLC	October 29, 2009
Enterprise Acquisition Corp.	November 7, 2007	ARMOUR Merger Sub Corp.	November 6, 2009
Prospect Acquisition Corp.	November 14, 2007	Kennedy-Wilson Inc.	November 14, 2009
China Holdings Acquisition Corp.	November 16, 2007	Gaoan Production Facility	January 22, 2010
Ideation Acquisition Corp.	November 19, 2007	SearchMedia International Ltd.	October 30, 2009
Global Consumer Acquisition Corp.	November 20, 2007	Service1st Bank of Nevada Corp.	October 29, 2010
Camden Learning Corp.	November 29, 2007	Dlorah Inc.	November 23, 2009
Liberty Acquisition Holdings Corp.	December 6, 2007	Promotora de Informaciones	November 29, 2010
Polaris Acquisition Corp.	January 11, 2008	Hughes Telematics Inc.	March 31, 2009
Asia Special Situation Acquisition Corp.	January 16, 2008	Amalphis Group Inc.	January 30, 2010
GHL Acquisition Corp.	February 14, 2008	Iridium Holdings LLC	September 29, 2009
BPW Acquisition Corp.	February 26, 2008	The Talbots Inc.	April 7, 2010
CS China Acquisition Corp.	August 11, 2008	Asia Gaming & Resort Ltd.	February 2, 2010
Chardan 2008 China Acquisition Corp.	August 11, 2008	DAL Group LLC	January 15, 2010

Table 2.
 Summary statistics: Distribution of special purpose acquisition company (SPAC) initial public offerings (IPOs) and merger and acquisition transactions.

Year	SPACs that completed an acquisition		SPACs that were liquidated	
	Number of IPOs	Number of acquisitions	Number of IPOs	Number of acquisitions
2003	1	–	–	–
2004	7	1	1	–
2005	24	1	5	–
2006	10	8	13	–
2007	25	25	25	–
2008	6	15	2	–
2009	–	16	–	–
2010	–	7	–	–
Total	73	73	46	–

Table 3.
Summary statistics: Industry classification.

Target industry	Frequency
Crude Petroleum and Natural Gas [Standard Industrial Classification (SIC) 13]	3
Printing, Publishing, and Allied Industries (SIC 27)	3
Electronic, Electrical Equipment, and Components, Except Computer Equipment (SIC 36)	3
Deep Sea Foreign Transportation of Freight (SIC 44)	3
Communications (SIC 48)	5
Holding, and Other Investment Offices (SIC 67)	6
Business Services (SIC 73)	15
Engineering, Accounting, Research, Management, and Related Services (SIC 87)	5
Other Industries ($N=27$)	30
Total	73

Table 4.
Summary statistics: Deal characteristics, ownership, and governance.

All variables are defined in the Appendix. The results of *t*-tests of differences in means and nonparametric Wilcoxon signed rank tests of differences in medians between the sample of completed and uncompleted acquisitions are reported in Panel C. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

Variable	Completed acquisitions					Withdrawn acquisitions					Difference	
	Mean	Median	Std. Dev.	Skew	N	Mean	Median	Std. Dev.	Skew	N	Mean	Median
<i>Panel A: Deal characteristics</i>												
Deal value	275.7	141.2	507.4	4.435	72	190.9	105	262.4	3.066	39	84.79	36.2
SPAC market capitalization	153.1	73.4	183.1	2.390	72	131.2	118	102.3	1.887	46	21.9	-44.6
Relative size	1.907	1.610	1.190	0.859	71	1.417	1.020	1.208	2.397	39	0.489**	0.490***
Cash deal (%)	0.178	-	0.385	1.683	73	0.209	-	0.412	1.429	43	-0.031	-
Stock deal (%)	0.205	-	0.407	1.458	73	0.140	-	0.351	2.081	43	0.066	-
Time to acquisition	388.7	395.0	192.8	-0.136	72	464.0	495.5	143.6	-0.496	46	-75.25**	-100.5**
Deferred fees	0.658	-	0.478	-0.664	73	0.891	-	0.315	-2.514	46	-0.234***	-
Underwriter is adviser	0.466	-	0.502	0.137	73	0.093	-	0.294	2.802	43	0.373***	-
Defer. fees*Under. is adviser	0.411	-	0.495	0.362	73	0.070	-	0.258	3.378	43	0.341***	-
80% deal	0.239	-	0.430	1.221	71	0.359	-	0.486	0.588	39	-0.120	-
<i>Panel B: Ownership</i>												
Ownership of sponsors (%)	0.108	0.080	0.095	1.532	71	0.131	0.121	0.101	1.572	24	-0.023	-0.041
Ownership of target insiders (%)	0.247	0.216	0.231	0.513	71	0.175	0.067	0.237	1.279	24	0.072	0.149*
Ownership of institutions (%)	0.286	0.274	0.189	0.355	71	0.258	0.272	0.163	-0.153	24	0.028	0.002
<i>Panel C: Governance</i>												
Directors from sponsors (%)	0.342	0.286	0.231	0.983	71	-	-	-	-	-	-	-
Chairman is a sponsor (%)	0.521	-	0.503	-0.085	71	-	-	-	-	-	-	-
CEO is a sponsor (%)	0.296	-	0.460	0.895	71	-	-	-	-	-	-	-
Directors from target insiders (%)	0.323	0.286	0.226	0.423	71	-	-	-	-	-	-	-
Chairman is a target insider (%)	0.451	-	0.501	0.198	71	-	-	-	-	-	-	-
CEO is a target insider (%)	0.662	-	0.476	-0.685	71	-	-	-	-	-	-	-
Board size	7.070	7.000	1.783	0.319	71	-	-	-	-	-	-	-
% of independent directors	0.335	0.333	0.227	0.161	71	-	-	-	-	-	-	-
Executive stock option plan	0.183	-	0.390	1.639	71	-	-	-	-	-	-	-

Table 5.

Short-term stock performance of special purpose acquisition companies around acquisition announcements.

The table reports cumulative abnormal returns, measured over a three-day event window around the acquisition announcement date. The benchmark is the Russell 2000 index. The results of t -tests of differences in means and nonparametric Wilcoxon signed rank tests of differences in medians are reported. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

Announcement return	Mean	Median	Std. Dev.	N
<i>Panel A: Completed acquisitions</i>				
All	0.015***	0.004	0.059	72
Cash	0.026	0.014	0.068	13
Stock	-0.005	-0.005	0.038	15
Mixed	0.021**	0.004	0.062	44
<i>Panel B: Withdrawn acquisitions</i>				
All	0.001	-0.001	0.034	46
Cash	0.003	0.004	0.025	7
Stock	0.002	0.001	0.027	5
Mixed	0.001	-0.009	0.037	34
<i>Panel C: All acquisitions</i>				
All	0.010**	0.001	0.048	118
Cash	0.015	0.009	0.048	20
Stock	-0.003	-0.002	0.034	20
Mixed	0.011**	-0.000	0.051	78
<i>Panel D: Completed less withdrawn</i>				
All	0.014	0.005		

Table 6.
Trust values and trading behavior of SPACs.

This table reports the average premiums (the relationship between common stock prices and pro rata trust values) at selected dates for the special purpose acquisition companies (SPACs) that have successfully completed an acquisition. Average premiums are calculated using the closing price on each respective date. The trust value is estimated assuming a constant rate of growth of the money invested in the trust from the initial public offering to the decision date. The SPAC acquirers are classified as good (bad) if the share price at the decision date was above (below) the trust value. The unconditional sample contains all SPACs. The conditional sample consists of only those SPACs in which SPAC sponsors have purchased additional shares in the open market during the period from the acquisition announcement to the shareholder vote date. The results of t -tests of differences in means and nonparametric Wilcoxon signed rank tests of differences in medians are reported. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

Respective date	Premiums for unconditional sample				Premiums for conditional sample			
	Mean	Median	Std. Dev.	N	Mean	Median	Std. Dev.	N
<i>Panel A: All completed acquisitions</i>								
First day of equity trading	-0.137***	-0.148***	8.187	64	-0.116***	-0.117***	0.056	32
Announcement date	-0.064***	-0.065***	0.124	64	-0.064***	-0.049***	0.061	32
Shareholder vote date	-0.021	-0.073**	0.262	64	-0.056***	-0.052***	0.131	32
Acquisition completion date	-0.039	-0.091**	0.302	64	-0.074***	-0.086***	0.160	32
<i>Panel B: Good acquisitions</i>								
First day of equity trading	-0.106***	-0.101***	0.060	21	-0.106***	-0.089***	0.065	7
Announcement date	0.022	-0.007	0.140	21	-0.019	-0.014	0.049	7
Shareholder vote date	0.237***	0.145***	0.283	21	0.108*	0.091	0.149	7
Acquisition completion date	0.249***	0.145***	0.319	21	0.108*	0.087	0.146	7
<i>Panel C: Bad acquisitions</i>								
First day of equity trading	-0.152***	-0.158***	0.087	43	-0.119***	-0.134***	0.054	25
Announcement date	-0.106***	-0.107***	0.091	43	-0.076***	-0.062***	0.059	25
Shareholder vote date	-0.147***	-0.132***	0.126	43	-0.101***	-0.085***	0.081	25
Acquisition completion date	-0.179***	-0.142***	0.162	43	-0.125***	-0.124***	0.124	25
<i>Panel D: Good less bad acquisitions</i>								
First day of equity trading	0.046**	0.057**			0.013	0.045		
Announcement date	0.129***	0.100***			0.057***	0.048**		
Shareholder vote date	0.383***	0.277***			0.210***	0.176***		
Acquisition completion date	0.429***	0.287***			0.233***	0.211***		

Table 7.
Long-term stock performance of SPACs using alternative benchmarks.

In Panel A, the benchmark is the Russell 2000 index. In Panel B, the benchmark is the industry- and size-matched non-acquisitions. In Panel C, the benchmark is all companies, apart from special purpose acquisition companies (SPACs) that became public in the year of the SPAC initial public offering (IPO) and all companies that became public in the year of the SPAC acquisition. Returns are computed assuming a buy-and-hold strategy. The t -tests of differences in means and nonparametric Wilcoxon signed rank tests of differences in medians are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

Respective period	SPACs					Benchmark					Difference	
	Mean	Median	Std. Dev.	Skew	N	Mean	Median	Std. Dev.	Skew	N	Mean	Median
<i>Panel A: Russell 2000 index benchmark</i>												
Announcement: Effective date	0.044	-0.002	0.297	1.838	71	0.022	0.047	0.147	-0.719	71	0.022	-0.049
Announcement: 1 year post-merger	-0.415	-0.584	0.561	1.596	71	-0.001	-0.033	0.284	0.046	71	-0.414***	-0.551***
Effective date: 3 months post-merger	-0.095	-0.145	0.371	0.965	71	0.005	0.034	0.135	-1.064	71	-0.100***	-0.179***
Effective date: 6 months post-merger	-0.198	-0.242	0.400	1.022	71	0.003	0.025	0.202	-0.267	71	-0.201***	-0.267***
Effective date: 9 months post-merger	-0.338	-0.371	0.359	0.287	71	-0.016	0.014	0.222	0.070	71	-0.322***	-0.385***
Effective date: 1 year post-merger	-0.410	-0.589	0.563	2.462	71	-0.013	-0.052	0.270	0.362	71	-0.397***	-0.537***
Effective date: 2 years post-merger	-0.563	-0.722	0.508	2.633	71	0.014	-0.064	0.366	0.911	71	-0.577***	-0.658***
<i>Panel B: Industry- and size-matched firms benchmark</i>												
Announcement: Effective date	0.058	0.006	0.298	1.873	67	-0.009	-0.020	0.487	-0.211	67	0.067	0.026
Announcement: 1 year post-merger	-0.440	-0.600	0.496	1.083	68	-0.050	-0.201	0.851	1.291	68	-0.390***	-0.399***
Effective date: 3 months post-merger	-0.091	-0.129	0.375	0.958	68	0.019	-0.019	0.551	3.395	68	-0.110*	-0.110*
Effective date: 6 months post-merger	-0.205	-0.260	0.406	1.063	68	0.227	-0.050	1.628	6.743	68	-0.432**	-0.210***
Effective date: 9 months post-merger	-0.344	-0.385	0.364	0.323	68	0.037	-0.055	0.527	1.140	68	-0.380***	-0.330***
Effective date: 1 year post-merger	-0.447	-0.580	0.445	1.043	68	0.198	-0.250	1.789	4.903	68	-0.645***	-0.330***
Effective date: 2 years post-merger	-0.542	-0.707	0.524	2.627	63	0.029	-0.151	0.885	2.229	63	-0.571***	-0.556***
<i>Panel C: Other IPOs benchmark</i>												
IPO date: 3 years post-IPO	-0.417	-0.650	0.735	1.384	70	-0.140	-0.149	0.200	0.026	70	-0.277***	-0.501***
IPO date: 4 years post-IPO	-0.519	-0.675	0.548	2.062	70	0.085	-0.169	0.321	0.163	70	-0.604***	-0.506***
IPO date: 5 years post-IPO	-0.586	-0.722	0.488	1.675	67	-0.019	-0.125	0.234	0.524	67	-0.567***	-0.597***
Effective date: 3 months post-merger	-0.093	-0.129	0.373	0.946	70	-0.042	0.006	0.073	-0.405	70	-0.051	-0.135
Effective date: 6 months post-merger	-0.197	-0.248	0.403	1.012	70	-0.106	-0.161	0.102	0.406	70	-0.091*	-0.087***
Effective date: 9 months post-merger	-0.340	-0.375	0.361	0.299	70	-0.170	-0.282	0.154	0.501	70	-0.170***	-0.093***
Effective date: 1 year post-merger	-0.432	-0.564	0.449	0.449	69	-0.194	-0.199	0.181	0.207	69	-0.238***	-0.365***
Effective date: 2 years post-merger	-0.563	-0.722	0.514	2.613	69	-0.256	-0.075	0.263	0.091	69	-0.307***	-0.647***

Table 8.
Industry-adjusted, matched firm-adjusted, and initial public offering (IPO) firm-adjusted accounting performance and leverage.

Panel A reports special purpose acquisition company (SPAC) operating performance measured one year after the merger completion date. Panel B reports SPAC capital structure, measured one year after the merger completion date. Panel C reports SPAC operating performance measured two years after the merger completion date. Panel D reports SPAC capital structure measured two years after the merger completion date. The *t*-tests of differences in means and nonparametric Wilcoxon signed rank tests of differences in medians are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

Variable	Industry-adjusted			Matched firm-adjusted			IPO firm-adjusted		
	Mean	Median	N	Mean	Median	N	Mean	Median	N
<i>Panel A: Performance one year after the merger</i>									
Operating return on sales (%)	-0.322*** (-3.36)	-0.049*** (-2.62)	66	-0.378*** (-3.92)	-0.107*** (-3.54)	66	-0.299*** (-3.22)	-0.030*** (-2.39)	66
Return on sales (%)	-0.291*** (-3.56)	-0.049*** (-2.68)	66	-0.335*** (-3.50)	-0.078*** (-2.83)	66	-0.302*** (-3.49)	-0.064*** (-2.36)	66
<i>Panel B: Capital structure one year after the merger</i>									
Long-term debt to assets (%)	0.094*** (2.52)	0.015 (1.67)	67	0.047 (1.16)	0.021 (1.14)	66	0.103*** (3.26)	0.020** (2.27)	67
Cash to assets (%)	0.034*** (2.49)	0.003* (1.76)	68	-0.040* (-1.90)	-0.019 (-1.55)	68	0.041*** (2.47)	0.002* (1.89)	68
Net long-term debt to assets (%)	0.047 (1.24)	0.047 (0.85)	67	0.073 (1.56)	0.096 (1.27)	66	0.072** (2.03)	0.045 (1.68)	67
<i>Panel C: Performance two years after the merger</i>									
Operating return on sales (%)	-0.135*** (-3.22)	-0.045*** (-2.40)	58	-0.173*** (-3.29)	-0.055*** (-2.38)	52	-0.147*** (-3.38)	-0.076*** (-2.75)	57
Return on sales (%)	-0.215*** (-4.54)	-0.079*** (-3.55)	58	-0.270*** (-4.49)	-0.083*** (-3.52)	52	-0.214*** (-4.82)	-0.111*** (-4.22)	57
<i>Panel D: Capital structure two years after the merger</i>									
Long-term debt to assets (%)	0.106*** (2.81)	0.035** (2.25)	57	0.086** (2.15)	0.040** (1.99)	51	0.161*** (4.63)	0.081*** (3.53)	56
Cash to assets (%)	0.035* (1.83)	0.001 (0.73)	58	-0.045 (-1.59)	-0.052* (-1.82)	52	0.050*** (1.52)	-0.008 (1.24)	57
Net long-term debt to assets (%)	0.072 (1.64)	0.057 (1.45)	57	0.135*** (2.49)	0.166** (2.26)	51	0.108*** (2.52)	0.102** (2.30)	56

Table 9. Industry-adjusted, matched firm-adjusted, and IPO firm-adjusted valuation measures.

Panel A reports Tobin's Q, earnings-to-price (E/P) ratios, and price-to-earnings (P/E) ratios for the special purpose acquisition company (SPAC) acquisitions net of their respective industry median values, matched firms, and matched initial public offering (IPO) firms measured one year after the merger was completed. Panel B reports the valuation ratios measured at the time of the merger completion. Tobin's Q is computed as [(book value of assets - book value of equity - deferred taxes + market value of equity) / book value of assets]. The E/P ratio is computed for all firms, and the P/E ratio is computed only for firms with positive earnings. Industry is defined at the four-digit Standard Industrial Classification code level. The *t*-tests of differences in means and nonparametric Wilcoxon signed rank tests of differences in medians are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

	Industry-adjusted			Matched firm-adjusted			IPO firm-adjusted		
	Mean	Median	N	Mean	Median	N	Mean	Median	N
<i>Panel A: Valuation one year after the merger</i>									
Tobin's Q	-0.083 (-1.01)	-0.321* (-1.75)	65	-0.233* (-1.86)	-0.084 (-1.09)	64	-0.136 (-1.45)	-0.272** (-2.13)	65
E/P ratio	-32.954*** (-2.89)	-2.307*** (-2.98)	65	-30.610*** (-2.64)	-1.556** (-1.96)	65	-32.119*** (-2.84)	-1.105*** (-2.53)	65
P/E ratio	-3.121 (-1.26)	-0.415** (-2.11)	18	-2.055* (-1.71)	-0.382*** (-2.69)	16	-0.342 (-0.94)	-0.580 (-1.20)	18
<i>Panel B: Valuation at merger completion</i>									
Tobin's Q	0.017 (0.15)	-0.168 (-1.25)	68	-0.158 (-1.08)	-0.195 (-1.55)	68	0.062 (0.51)	-0.175 (-1.09)	67
E/P ratio	-4.206*** (-2.43)	-0.642* (-1.91)	68	-2.578 (-1.12)	-0.754 (-0.95)	68	-4.445*** (-2.63)	0.004 (-1.16)	67
P/E ratio	2.453** (2.02)	0.498*** (3.36)	29	1.858 (1.03)	0.099 (0.24)	19	-4.448*** (-4.14)	-2.760*** (-3.18)	13

Table 10.
Cross-sectional regression of long-term stock performance of SPACs.

The dependent variable is the initial public offering (IPO)-adjusted buy-and-hold return earned by special purpose acquisition companies (SPACs) over a four-year period following the SPAC IPO date. All explanatory variables are described in the Appendix. *Deal value* is transformed using started-log transformation. Heteroskedasticity-adjusted (White) standard errors are used in calculation of *t*-statistics that are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

Explanatory variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Time to acquisition	2.771* (1.74)	3.473** (2.17)	3.667*** (2.36)	4.043*** (2.48)	3.166** (2.07)	3.015* (1.93)	3.499** (2.16)
Time to acquisition ²	-0.238* (-1.70)	-0.301** (-2.04)	-0.316** (-2.21)	-0.350*** (-2.34)	-0.267* (-1.90)	-0.254* (-1.77)	-0.302** (-2.01)
Deferred fees	-0.331** (-2.15)	-0.501*** (-2.53)	-0.499*** (-2.67)	-0.526*** (-2.66)	-0.551*** (-2.95)	-0.472*** (-2.41)	-0.471*** (-2.49)
Underwriter is adviser		-0.679** (-2.26)	-0.762*** (-2.66)	-0.641** (-2.01)	-0.706*** (-2.49)	-0.566* (-1.90)	-0.752*** (-2.68)
Defer. fees*Under. is adviser		0.685** (1.98)	0.744*** (2.40)	0.635* (1.83)	0.750*** (2.47)	0.613* (1.86)	0.779*** (2.60)
80% deal			0.359 (1.42)	0.325 (1.17)	0.374 (1.51)	0.377 (1.45)	0.447 (1.68)
Ownership of sponsors	0.851 (0.29)	3.894 (1.17)	1.280 (0.45)	4.226 (1.26)	3.624 (1.22)	4.006 (1.30)	3.071 (1.08)
Ownership of sponsors ²	-8.021 (-0.81)	-17.599 (-1.57)	-9.936 (-1.03)	-19.323* (-1.70)	-18.551* (-1.83)	-19.538** (-1.96)	-15.991 (-1.67)
Ownership of target insiders	-0.814 (-0.82)	-0.066 (-0.06)	-0.694 (-0.69)	-0.066 (-0.06)	-0.718 (-0.69)	-1.109 (-1.06)	-1.291 (-1.22)
Ownership of target insiders ²	0.768 (0.55)	0.120 (0.08)	0.527 (0.38)	-0.064 (-0.04)	0.471 (0.34)	0.989 (0.69)	1.018 (0.73)
Chairman is a sponsor	0.597*** (2.54)		0.571*** (2.45)		0.616*** (2.59)	0.570** (2.19)	0.678*** (2.91)
Chairman is a target insider	0.417* (1.90)		0.250 (1.13)		0.188 (0.61)	0.283 (1.25)	0.272 (1.25)
CEO is a sponsor	0.105 (0.30)		0.268 (0.80)				0.468 (1.36)
CEO is a target insider	0.132 (0.42)		0.269 (0.89)				0.551* (1.74)
CEO duality from sponsor		0.291 (1.21)		0.273 (1.05)	0.213 (1.04)		
CEO duality from target insider		-0.006 (-0.04)		-0.005 (-0.03)	0.148 (0.52)		
Ownership of old institutions							-0.652 (-1.13)
Ownership of new institutions							-0.461 (-1.06)
Ownership of institutions	-0.825** (-2.15)	-0.603 (-1.39)	-0.964*** (-2.60)	-0.698 (-1.58)			
Cash deal	0.181 (0.89)	0.075 (0.33)	0.089 (0.45)	0.096 (0.42)	0.028 (0.14)	0.087 (0.39)	0.009 (0.05)
Private target	-0.257* (-1.75)	-0.282* (-1.69)	-0.285** (-1.98)	-0.292* (-1.77)	-0.297** (-1.98)	-0.330** (-2.06)	-0.392*** (-2.46)

Table 10 – Continued

Explanatory variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Relative size	0.094 (0.58)	0.091 (0.43)	-0.040 (-0.23)	-0.002 (-0.01)	-0.092 (-0.54)	-0.118 (-0.51)	-0.099 (-0.58)
SPAC market capitalization	-0.025 (-0.09)	0.048 (0.14)	-0.396 (-1.04)	-0.260 (-0.55)	-0.470 (-1.27)	-0.530 (-1.17)	-0.537 (-1.44)
Deal value	0.010 (0.04)	-0.062 (-0.17)	0.415 (1.05)	0.253 (0.50)	0.503 (1.30)	0.509 (1.06)	0.538 (1.39)
Target's liquidity index	1.512 (1.56)	2.738** (2.15)	1.398 (1.49)	2.649** (2.10)	1.915** (1.95)	2.390* (1.93)	1.543 (1.67)
N of CEO's stock options			-0.001 (-0.52)	-0.001 (-1.01)	-0.001 (-0.46)	-0.001 (-0.93)	-0.001 (-0.98)
N of outside blockholders					-0.082*** (-2.33)	-0.091*** (-2.42)	-0.050 (-0.97)
% of independent directors					0.470 (1.52)	0.521 (1.58)	0.764** (2.26)
Constant	-8.659** (-1.95)	-9.782** (-2.20)	-11.137*** (-2.56)	-11.367** (-2.50)	-10.026*** (-2.35)	-9.026** (-2.09)	-10.924*** (-2.48)
N	67	67	67	67	67	67	67
Adj. R ²	0.279	0.268	0.354	0.285	0.383	0.368	0.400
Industry fixed effects	No	Yes	No	Yes	No	Yes	No

Table 11.
Cross-sectional regression of short-term stock performance of SPACs.

The dependent variable is the market-adjusted cumulative abnormal return earned by special purpose acquisition companies (SPACs) over a three-day event window around the acquisition announcement date. The sample in columns 1 to 6 contains only the successfully completed SPAC acquisitions; in column 7, all announced acquisitions (completed and uncompleted). All explanatory variables are described in the Appendix. *SPAC market capitalization* and *Deal value* are transformed using started-log transformation. Heteroskedasticity-adjusted (White) standard errors are used in calculation of *t*-statistics that are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

Explanatory variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Time to acquisition	0.444*** (2.44)	0.524*** (3.00)	0.433*** (2.60)	0.485*** (2.76)	0.498*** (3.23)	0.450*** (2.88)	0.229* (1.69)
Time to acquisition ²	-0.041*** (-2.45)	-0.049*** (-3.06)	-0.041*** (-2.67)	-0.046*** (-2.88)	-0.047*** (-3.34)	-0.043*** (-3.02)	-0.022* (-1.72)
Deferred fees		-0.059*** (-3.45)	-0.049*** (-2.47)	-0.056*** (-3.22)	-0.061*** (-3.21)	-0.056*** (-2.86)	-0.043*** (-2.71)
Underwriter is adviser			0.024 (0.78)		0.049 (1.67)	0.063** (2.12)	0.006 (0.23)
Defer. fees*Under. is adviser			-0.033 (-0.97)		-0.049 (-1.57)	-0.054 (-1.66)	-0.001 (-0.04)
80% deal			-0.053** (-1.95)	-0.054* (-1.89)	-0.073*** (-2.86)	-0.073*** (-2.77)	-0.015 (-0.94)
Ownership of sponsors	-0.435 (-1.31)	-0.711** (-2.09)	-0.677** (-2.23)	-0.719** (-2.08)	-0.648** (-2.25)	-0.630** (-2.04)	-0.244 (-1.33)
Ownership of sponsors ²	0.748 (0.69)	1.709 (1.56)	1.700* (1.70)	1.803 (1.58)	1.556 (1.60)	1.523 (1.49)	0.324 (0.72)
Ownership of target insiders	-0.103 (-0.89)	-0.076 (-0.67)	-0.107 (-1.01)	-0.095 (-0.84)	-0.175* (-1.73)	-0.224** (-2.07)	-0.046 (-0.56)
Ownership of target insiders ²	0.157 (0.95)	0.120 (0.74)	0.180 (1.19)	0.150 (0.94)	0.229 (1.64)	0.236 (1.61)	0.059 (0.50)
Chairman is a sponsor	0.058** (2.14)	0.052** (1.98)	0.036 (1.45)	0.039 (1.43)	0.019 (0.82)	0.017 (0.65)	0.041** (1.96)
Chairman is a target insider	0.048* (1.89)	0.046* (1.89)	0.037 (1.56)	0.039 (1.59)	0.024 (1.08)	0.030 (1.32)	0.022 (1.12)
CEO is a sponsor	0.022 (0.54)	-0.003 (-0.08)	0.007 (0.18)	-0.015 (-0.39)	0.001 (0.03)	-0.015 (-0.41)	0.014 (0.51)
CEO is a target insider	0.043 (1.18)	0.010 (0.28)	0.019 (0.56)	0.003 (0.10)	0.026 (0.85)	0.031 (0.93)	0.025 (0.94)
Ownership of institutions	0.010 (0.22)	-0.012 (-0.25)	0.024 (0.60)	-0.010 (-0.22)	0.012 (0.31)		0.037 (1.19)
Cash deal	0.038* (1.74)	0.030 (1.23)	0.036* (1.81)	0.032 (1.36)	0.034* (1.79)	0.045** (2.11)	0.014 (0.91)
Private target	0.029* (1.69)	0.018 (1.04)	0.028* (1.80)	0.018 (1.04)	0.034*** (2.35)	0.020 (1.27)	0.016 (1.15)
Relative size	-0.003 (-0.14)	-0.016 (-0.72)	0.006 (0.32)	0.004 (0.15)	0.017 (0.98)	0.016 (0.71)	-0.002 (-0.22)
SPAC market capitalization	-0.000 (-0.00)	0.008 (0.20)	0.065 (1.57)	0.069 (1.42)	0.096*** (2.49)	0.099** (2.14)	0.012 (0.82)
Deal value	0.020 (0.59)	0.031 (0.79)	-0.029 (-0.68)	-0.031 (-0.61)	-0.059 (-1.49)	-0.066 (-1.34)	0.002 (0.15)

Table 11 – Continued

Explanatory variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Target's liquidity index				0.104 (0.75)	0.046 (0.49)	0.172 (1.39)	
N of CEO's stock options					-0.001*** (-3.40)	-0.001*** (-3.73)	
N of outside blockholders						-0.006 (-1.63)	
% of independent directors						0.022 (0.66)	
Constant	-1.325*** (-2.63)	-1.533*** (-3.21)	-1.248*** (-2.67)	-1.387*** (-2.86)	-1.383*** (-3.21)	-1.257*** (-2.91)	-0.663* (-1.78)
<i>N</i>	68	68	68	68	68	68	91
Adj. R ²	0.124	0.272	0.320	0.303	0.441	0.471	0.145
Industry fixed effects	No	Yes	No	Yes	No	Yes	No

Appendix

This appendix provides a summary of all explanatory variables used in my analysis.

Variable name	Variable description
Deal characteristics:	
<i>Deal value</i>	Natural logarithm of the value of the transaction.
<i>SPAC market capitalization</i>	Natural logarithm of the market capitalization of the SPAC computed at the price at the acquisition announcement, measured in millions of dollars.
<i>Relative size</i>	Value of the target as a fraction of the market capitalization of the acquirer.
<i>Cash deal</i>	Dummy variable that takes a value of one if the medium of exchange is cash and zero otherwise.
<i>Stock deal</i>	Dummy variable that takes a value of one if the medium of exchange is stock and zero otherwise.
<i>Private target</i>	Dummy variable that takes a value of one if the target is a private firm and zero otherwise.
<i>Target's liquidity index</i>	Ratio of the value of all corporate control transactions reported by SDC for each year and two-digit SIC code to the total book value of assets of all Compustat firms in the same two-digit SIC code and year.
<i>Time to acquisition</i>	Natural logarithm of the number of days between the SPAC IPO and the acquisition announcement.
<i>Time to acquisition</i> ²	<i>Time to acquisition</i> squared.
<i>Deferred fees</i>	Dummy variable that takes a value of one if a portion of the IPO's underwriter compensation is deferred and paid only upon a successful merger completion and zero otherwise.
<i>Underwriter is adviser</i>	Dummy variable that takes a value of one if a SPAC acquisition adviser is also the company's underwriter and zero otherwise.
<i>Defer. fees*Under. is adviser</i>	Product of <i>Deferred fees</i> and <i>Underwriter is adviser</i> .
<i>80% deal</i>	Dummy variable that takes a value of one if the deal value is worth within 10% of the required 80% threshold (80% of the SPAC's net assets), at the time of the acquisition completion, and zero otherwise.
Ownership:	
<i>Ownership of sponsors</i>	Fraction of the firm held by sponsors immediately after the acquisition.
<i>Ownership of sponsors</i> ²	<i>Ownership of sponsors</i> squared.
<i>Ownership of target insiders</i>	Fraction of the firm held by target insiders immediately after the acquisition.
<i>Ownership of target insiders</i> ²	<i>Ownership of target insiders</i> squared.
<i>Ownership of institutions</i>	Fraction of the firm held by institutional blockholders immediately after the acquisition.
<i>Ownership of old institutions</i>	Fraction of the firm held by old institutional blockholders (institutional blockholders that also held shares prior to the acquisition) immediately after the acquisition.
<i>Ownership of new institutions</i>	Fraction of the firm held by new institutional blockholders (institutional blockholders that first buy shares at the time of the acquisition announcement) immediately after the acquisition.
Governance:	
<i>Directors from sponsors</i>	Fraction of sponsors on the board of directors immediately after the acquisition.
<i>Directors from target insiders</i>	Fraction of target insiders on the board of directors immediately after the acquisition.

Appendix A.1 – Continued

Variable name	Variable description
<i>Board size</i>	Number of board members immediately after the acquisition.
<i>Chairman is a sponsor</i>	Dummy variable that takes a value of one if the chairman of the newly merged company is one of the sponsors and zero otherwise.
<i>Chairman is a target insider</i>	Dummy variable that takes a value of one if the chairman of the newly merged company is one of the target insiders and zero otherwise.
<i>CEO is a sponsor</i>	Dummy variable that takes a value of one if the CEO of the newly merged company is one of the sponsors and zero otherwise.
<i>CEO is a target insider</i>	Dummy variable that takes a value of one if the CEO of the newly merged company is one of the target insiders and zero otherwise.
<i>CEO duality from sponsor</i>	Dummy variable that takes a value of one if the CEO also holds the position of the chairman of the board of directors and is one of the sponsors and zero otherwise.
<i>CEO duality from target insider</i>	Dummy variable that takes a value of one if the CEO also holds the position of the chairman of the board of directors and is one of the target insiders and zero otherwise.
<i>N of outside blockholders</i>	Number of outside blockholders owning 5% or more shares immediately after the acquisition.
<i>% of independent directors</i>	Fraction of independent directors on the board of directors immediately after the acquisition.
<i>Executive stock option plan</i>	Dummy variable that takes a value of one if the newly merged company has proposed the adoption of an executive stock option plan and zero otherwise.
<i>N of CEO's stock options</i>	Number of stock options awarded to the CEO of the newly merged company.
Accounting measures:	
<i>Operating return on sales</i>	SPAC's acquisition operating income divided by total sales.
<i>Return on sales</i>	SPAC's acquisition net income before extraordinary items divided by total sales.
<i>Long-term debt to assets</i>	SPAC's acquisition ratio of long-term debt to total assets.
<i>Cash to assets</i>	SPAC's acquisition cash and equivalents, divided by total assets.
<i>Net long-term debt to assets</i>	SPAC's acquisition ratio of long-term debt minus cash, divided by total assets.