What all-cash companies tell us about IPOs and acquisitions

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A R T I C L E   I N F O

A B S T R A C T

We examine the IPOs of and acquisitions made by special purpose acquisition corporations (SPACs). This unique sample provides a perspective on these two corporate events unencumbered by much of the typical confounding information. We find the IPO gross spreads of these simple firms similar to the spreads accompanying the IPOs of much more complex firms. This result is consistent with illogically sticky spreads. We find acquirer announcement returns roughly triple that of typical acquisitions. Since these returns disproportionately reflect the valuation split between acquirer and target, they suggest that the lower returns of typical acquisitions stem from overestimating synergies and/or new information regarding the bidder.

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1. Introduction

Special purpose acquisition corporations (hereafter, SPACs) are essentially pools of cash that managers take public for the purpose of making a future acquisition. Given the unique information environment offered by SPACs, we exploit the opportunity to hold firm value relatively constant while considering aspects of acquisitions and initial public offerings (hereafter, IPOs). We find results consistent with IPO gross spreads being illogically sticky, with IPO initial returns being related to the uncertainty of the value of the firm, and with non-SPAC acquisition announcement returns being influenced by bad bidding. While not all of our results are surprising (e.g., that initial returns are related to the riskiness of the firm), they all emerge from a setting in which there is little noise, and thus provide cleaner answers to questions regarding underwriter compensation and managerial bidding behavior than the literature can typically afford.

This unique set of firms offers a significant reduction in confounding information at the time of both the IPO and acquisition. At the IPO the firm exhibits truncated downside risk due to a trust fund designed to deliver back almost all of the cash from shareholders' initial investment if no acquisition occurs. Conversely, the upside is largely constrained, limited to the product of the probability of acquisition and the ability of the SPAC manager to negotiate favorable terms for SPAC shareholders. This relative uniformity in SPAC structure allows us to examine gross spreads to see if the curious lack of variance in gross spreads observed in the IPO literature survives in this less complex sample. For acquisitions, the acquirer's absence of non-cash operating assets, along with a specific firm purpose (finding a target), means that the only significant information component in the acquirer's bid at the time of the acquisition announcement is how the value of the combined firm is split between bidder and target.

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Though our focus is not the SPAC organizational structure, an understanding of the form's unique characteristics aids the interpretation of the empirical results. A SPAC is a shell, or blank check, company formed for the purpose of effecting the future acquisition of an operating business, whose identity is unknown to the manager and the general public at the time of the IPO. The SPAC raises capital in an IPO and then searches for an operating business, holding the IPO proceeds in a trust account. If the SPAC manager is unable to complete an acquisition in a pre-specified window of time, then a substantial portion (usually over 95%) of the proceeds are returned to shareholders.

Our sample period contains 260 preliminary prospectus filings for SPACs for a proposed $37 billion in IPO proceeds. About 60% of these SPACs accomplish an IPO, and only 33%, as of March 2012, complete both an IPO and an acquisition. These acquisitions account for about $20 billion in privately held assets moving into public equity markets, an amount that is about 10% of the value of all proceeds raised in non-SPAC IPOs from the same period.[2]

First, we analyze the magnitude of initial returns and, more importantly, the size of gross spreads in SPAC IPOs. We find mean initial returns of less than 1%. This lower-than-usual underpricing amount is consistent with the valuation process in a SPAC IPO being much less noisy, and thus easier, than that of a typical IPO. The role of the investment bank should be less labor intensive — the SPAC "pool of cash" model is relatively constant compared to that of the typical firms coming to the IPO market. Moreover, SPAC valuation is less complex since the trust amount provides a floor. The lack of underpricing in SPACs bears out this intuition.

Yet we find the gross spreads in SPACs to be similar in size to those in non-SPAC IPOs, around 7%. Chen and Ritter (2000) and Abrahamson et al. (2011) attempt to explain the sticky 7% gross spread in non-SPAC IPOs as either (1) reflecting collusion or substitution away from indirect compensation or (2) simply reflecting the fixed costs of taking a firm public. Since SPAC IPOs should involve smaller fixed costs than non-SPAC IPOs our results suggest that collusion or substitution might be at play. Furthermore, we show a large shift in the fee structure from 2003 to 2011. Over this period investment banks underwriting SPAC IPOs switch from a standard flat fee to a part up-front, part deferred, fee. This deferral in fees is further evidence of large non-fixed costs. The willingness of banks to push a substantial portion of their compensation to an uncertain acquisition date only after substantial competition for SPAC underwriting emerged indicates that the traditional spread of 7% does not merely reflect bank effort.

Second, we examine acquirer acquisition announcement returns. Crucially SPAC acquisition announcement returns have fewer imbedded valuation components than do typical takeovers. As shown by Hietala et al. (2003), the typical acquisition announcement return reflects 1) the creation of synergies, 2) the stand-alone value of both the target and the bidder, and 3) how the value of the combined firm is split between bidder and target.

We suggest that the main informational component in SPAC acquirer announcement returns is the accuracy of the offer's valuation of the target. Unlike a non-SPAC acquisition, when a SPAC acquires a firm there is no consolidation of operating assets. Therefore, the announcement returns we examine will not reflect synergy creation, an oft-cited reason for value creation in acquisitions. Also, unlike non-SPAC acquirers, there is relatively little uncertainty about the value of the bidder and little to no surprise at the announcement of a bid by a SPAC. Thus, the only significant uncertainty is how the value of the combined firm is split. Therefore, the market reaction at the announcement is merely a reflection of the accuracy of the valuation or, put differently, the extent of any perceived bargain or overpayment in the acquisition price. Thus, these returns present an opportunity to test the strength of the behavioral motivations related to the pricing of mergers that the literature presents.

The characteristics of the objectives of SPAC managers and their compensation are non-standard and change throughout our sample period of 2003 to 2011. In the beginning, managers received 20% of the SPAC shares only if a deal went through, thus this original SPAC model rewarded mere acquisition. Over time, managers began to contribute more of their own capital to the initial proceeds, allowing the trust percentage to increase. These changes provide a larger backstop for investors, but also provide an even greater incentive for the manager to complete a transaction. However, tempering the incentive of SPAC managers to complete any deal is SPAC investors' powers of voice and exit. A SPAC acquisition requires a majority shareholder vote. Further, dissenting shareholders may receive back their share of the escrow fund, and if more than a certain percentage of shareholders — generally 20% — exercise this right, then the deal does not go through. This feature essentially amounts to a secondary supermajority vote on an acquisition, allowing shareholders to veto any improvident deals.

While the motivations of SPAC managers differ from those of managers in a typical acquisition, it is unclear what difference this makes on manager's incentives. The main incentive of a SPAC manager is to complete a transaction: without one, the manager is left without compensation. This incentive to acquire is analogous to empire-building and carries along with it a similar motivation to overpay. Thus, there are incentives for the SPAC manager to make acquisitions that, while creating value for himself, may not create value for stockholders. On the other hand, the motivation to overpay is counterbalanced by the requirement of shareholder approval, which may mitigate mispricing.[3] Moreover, negative motivations for acquisition may be tempered by the fact that managers often go back to the market, similar to managers of venture capital firms (see Gompers (1996)). As repeat players they have an incentive to cultivate a reputation for pursuing good deals. Thus, while the incentive structure of SPAC managers is different from that of non-SPAC managers, the potential for bad behavior is still present. We control for managerial motivation by controlling for the number of days until the SPAC contract expires and the ownership percentage of the manager, presuming that closer to expiration managers become more desperate.

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[2] We compare the sum of the non-public target deal values from SPAC purchases to the sum of aggregate proceeds for IPOs from 2003 to 2011 in Jay Ritter's "Initial Public Offerings: Tables Updated Through 2011" available here: http://bear.warrington.ufl.edu/ritter/IPOs2011Statistics020112.pdf.

[3] Of the 125 firms in our sample that announce acquisitions, only 87 complete an acquisition, and shareholders explicitly vote down 17 of them, showing that the threat of a "no" vote is non-trivial.

Our multivariate results are consistent with managerial incentives influencing target valuation. We find that announcements made closer to the deadline have significantly lower announcement returns than those announced further away from the deadline, which suggests that managers with time pressure to complete a transaction make worse bids. Additionally, we find a positive relation between announcement returns and managerial ownership. Thus, the coefficients from our regression results support the importance of negative behavioral components (e.g., overconfidence, hubris, or empire building) as an influence on managerial bidding ability.

Last, we find that the average announcement return of SPAC acquirers is triple that of size, industry, and time-matched acquirers.[4] This comparison is striking considering the probability of completion for non-SPAC acquirers (which often lack the requirement of shareholder veto) is higher than the probability of completion for our sample, thus reducing the size of the price response of SPACs around the announcement.[5] This increase in magnitude in comparison with non-SPAC acquisitions suggests that typical acquisition announcement returns contain significant negative components caused by the overestimation of synergies, the revelation of negative information about the bidder, or both.

2. Data

Our sample consists of 260 SPACs filing a preliminary prospectus with the SEC from 2003 to 2011. Sixteen of these firms file a preliminary prospectus in 2010 and 2011. Since the search period for these 16 firms is still ongoing at the writing of this paper, we exclude these firms in some of the analysis.

We construct our sample using Morningstar Document Research to search all S-1 filings on EDGAR from January 1, 2003 to December 31, 2011 for the term "6770."[6] The SIC code 6770 is the code for blank check companies, of which SPACs are a subset. We add the restriction that "6770" must be near the term "Standard", which will appear in the phrase "Primary Standard Industrial Classification Code Number." This restriction eliminates instances of 6770 that appear but are not related to the SIC. This word search produces 325 results. We delete the following transactions from this set of companies:

- S-1s for secondary equity offerings
- Firms subject to Rule 419, and thus by definition not SPACs[7]
- Offerings that are not unit offerings, which is a standard characteristic of SPACs
- Limited partnership commodity pools
- Firms filing under small business guidelines
- Firms proposing to trade in only a few states.

We use the SDC M&A database, EDGAR filings, and LexisNexis to collect specific data related to the proposed IPO, the actual IPO, and any business combination. We find that there is no standard way to collect the SPAC data from SDC, through either its IPO database or its M&A data. The main reason is that SDC does not uniformly classify the SPACs in our sample by a particular industry or even by the SIC code listed in the S-1. Thus, we use SDC as a supplemental source of data only. All business combination announcement dates are collected through LexisNexis and EDGAR filings.

Our sample is larger than that of Jenkinson and Sousa (2011), who examine the long-term performance of SPACs, for two reasons. First, our sample extends to 2011, while theirs ends in June of 2008. Second, we do not require post-acquisition share price performance. We provide no statistics on SPAC performance after the acquisition, thus our papers are largely examining different aspects of a similar group of SPACs.

We report SPAC characteristics in Table 1. This data is either from the most recent S-1 for those SPACs that never undertake an IPO or from the final prospectus from those that are successful. The average and median proceeds from the intended (or actual) IPO are $140 and $100 million, respectively. This amount excludes proceeds from private placements, which accompany many of the more recent SPAC IPOs. The mean proceeds from private placements at the time of the IPO is $32.8 million. The mean total proceeds, which we do not report in Table 1, is $143 million. Thus, SPACs raise, on average, more capital than typical IPOs from a similar period. For example, Hanley and Hoberg (2010), report average IPO gross proceeds of $116 million. For the entire sample period the sum of proposed and actual IPO proceeds and private placements is over $37 billion.

One difference between SPAC and non-SPAC IPOs is that SPACs almost always (and always in this sample) undertake unit IPO offerings, which are typically one share and one warrant per unit. Schultz (1993) examines 797 unit IPOs from 1986 to 1988 and finds median proceeds of $7.2 million, and only one transaction with proceeds greater than $20 million. The offerings in Schultz (1993) raise significantly smaller amounts of capital than the unit offerings from our sample of SPACs. Table 1 shows that the median unit (strike) price is $8.00 ($6.00) and the median unit-to-strike ratio is 1.33. This ratio shows that the unit, in most transactions, is set

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[4] One critique of comparing targets of SPACs and non-SPACs is that the two targets are not comparable. Castelli (2009), Berger (2008), and Riemer (2007) all argue that some SPAC targets are not suitable for traditional initial public offerings. We contend that it is also true that some, perhaps even most, private targets purchased by traditional acquirers are also not suitable IPO candidates (see, for example, Poulsen and Stegemoller (2008)).

[5] Acquisition completion by SPACs is 63.5% versus about 92% for Jacobsen's (2013) sample of acquisitions of public and private targets and 78% for Officer's (2003) sample of acquisitions of public targets.

[6] We rely on Morningstar Document Research because an EDGAR search leaves out valid transactions since the SEC reclassifies the SPAC SIC into the SIC of the target after an acquisition. For example, 57th Street General Acquisition Corp. was a blank check company with SIC code 6770 until it acquired Crumbs Bake Shop, Inc. After the acquisition, the name of the SPAC became the target's name and is reclassified under Bakery Products (SIC 2050).

[7] Rule 419 defines a "blank check" company as one that is both issuing penny stock and "is a development stage company that has no specific business plan or purpose or has indicated that its business plan is to engage in a merger or acquisition with an unidentified company or companies, or other entity or person." SPACs avoid being penny stock by having a market value of over $5 million.
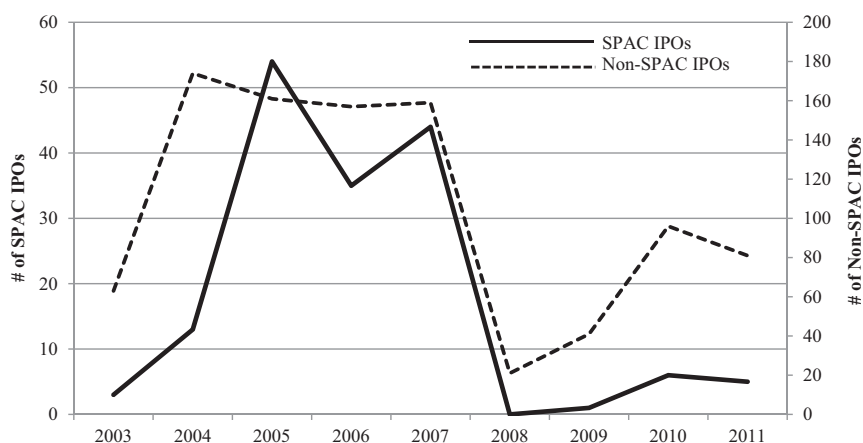
Table 1

SPAC characteristics.

This table shows the characteristics of 260 SPACs that file an S-1 from 2003 to 2011. IPO proceeds is the value of the proceeds to the firm before expenses. Private placement proceeds is the amount of proceeds the firm receives from the private placement of securities prior to IPO. Unit price is the price of the unit. Strike price is the price at which warrants may be exercised. Unit-to-strike is the ratio of the unit price to the strike price. Manager ownership % is the percent of outstanding common stock owned by the founding manager(s) of the firm. Private placement % is the ratio of private placement proceeds to IPO proceeds. Conversion threshold % is the percent of shares that must vote no in order for a proposed combination to be blocked. Months allowed is the length of time allowed for a business combination to be completed. % held in trust is the amount of the IPO proceeds plus private placement proceeds that are held in an escrowed trust account and may not be released until the conclusion of the acquisition or expiration of the SPAC. Underwriter discount % is the amount of fees paid to underwriters as a percent of IPO proceeds. Deferred discount % is the amount of fees paid to underwriters as a percent of IPO proceeds due when a business combination is completed by the SPAC. Number of underwriters is the count of underwriters appearing in the firm's tombstone. Rank of lead underwriter is taken from Jay Ritter's ranking database. The data is collected from the latter of the last S-1 or final prospectus reported on the EDGAR database.

	Mean	Median	Min	Max	N
IPO proceeds ($ in millions)	140.0	100.0	7.9	900.0	260
Private placement proceeds ($ in millions)	32.8	25.0	0.0	35.0	260
Unit price ($)	8.42	8.00	6.00	20.00	260
Strike price ($)	6.38	6.00	4.50	12.00	260
Unit-to-strike	1.34	1.33	0.83	2.86	260
Manager ownership %	19.5	20.0	0.0	5.6	260
Private placement %	2.5	2.5	0.0	9.7	260
Conversion threshold %	31.1	30.0	20.0	97.1	260
Months allowed	25.2	24.0	15.0	36.0	260
% held in trust	96.4	98.1	82.8	104.0	260
% stock in method of payment	46.2	45.2	0.0	100.0	133
Underwriter discount %	7.0	7.0	1.0	10.0	259
Deferred discount %	2.6	3.0	0.0	5.4	259
Number of underwriters	2.2	2.0	0.0	7.0	260
Rank of lead underwriter	5.8	7.0	1.0	9.0	232

to benefit the unit holder and will have a dilutive effect on target shareholders in completed transactions. Rodrigues and Stegemoller (2013) show that this ratio ceases to have a dilutive effect starting in 2009 when the mean unit-to-strike ratio falls below one.

SPAC managers own, on average, 19.5% of the SPAC. This ownership is the managers' compensation should the SPAC make an acquisition and often includes an amount the managers invest in a private placement simultaneous to the IPO. The average percent of the total IPO proceeds represented by the private placement is 2.5% of the total proceeds raised by the firm. Thus, the manager's incentives are to accomplish an acquisition, thereby releasing the value of his or her ownership. Indeed, if no acquisition is completed, then the manager loses not only the time spent searching for a target and any additional ownership that he could have liquidated in the newly merged firm, but also is out of pocket all of his monetary investment in the private placement.

Three characteristics unique to SPACs are the conversion threshold percent, the months allowed for an acquisition, and the percent of proceeds held in trust. The median conversion threshold percent is 30%, which means that most SPACs will return the cash held in trust if 30% of the shares are redeemed in lieu of an acquisition. This conversion threshold varies from 20% to 97.1%, with the maximum value reflecting a case in which the shareholders have very little say in approval. The median time to accomplish an acquisition from the IPO is 24 months. This period ranges from 15 months to three years. If the SPAC is unable to complete an acquisition within this window, then shareholders receive the trust amount. The average percent of the proceeds held in trust is 96.4%, which means that should the firm not accomplish an acquisition, then the firm will return 96.4% of the total IPO proceeds to shareholders.

Fig. 1. Successful offerings of SPAC and non-SPAC IPOs over time.

Most of the 133 announced acquisitions by successful SPAC IPOs with available method of payment data propose some non-trivial percentage of stock in the payment method. Table 1 shows that over half propose to finance 45% or more of the acquisition with stock. 22.6% of firms use only stock. This proportion is similar to the 20.3% of firms in a more standard M&A sample analyzed by Pinkowitz et al. (2013) who show that acquirers with abnormally large cash balances are more likely to use stock as a method of payment than firms that are not cash rich. In the context of SPACs, the acquirer's use of stock allows the target immediate access to cash, which makes these transactions a de facto IPO for the target, providing both a public market for their stock and a large cash infusion.

The remainder of Table 1 concerns underwriters. We find an average and median underwriting discount (gross spread) of 7%, with a range from 1% to 10% of total IPO proceeds. The average is slightly lower (compared to 7.4%) and the median is the same (7%) as the underwriting spread found by Kim et al. (2010) in their analysis of 4875 IPOs from 1980 to 2000. Lee et al. (1996) find a similar average spread of 7.31% for a group of IPOs in the early 1990s. A component of gross spreads unique to SPACs is the existence of a deferred discount, which the underwriter receives only at the completion of an acquisition. About 82% of all SPACs that file an S-1 indicate the presence of some form of deferred fee, which is an average of 2.6% of the IPO proceeds.

Finally, we report both the lead underwriter rank using Jay Ritter's updated Carter and Manaster (1990) rankings and the number of underwriters appearing on the first page of the SPAC's preliminary prospectus. The average number of investment banks listed is 2.2 and the average (median) rank of the lead underwriter is 5.8 (7), respectively. The rank of the lead underwriter in our sample is lower than the average (median) rank of 7.16 (8) for a large sample of IPOs from 1981 to 2006 examined by Wang and Yung (2011). Fig. 3 in Liu and Ritter (2011) shows that our mean and median number of underwriters is much lower than in non-SPAC IPOs from the same period — their yearly average number of top-tier managers per IPO is over four in every year of our sample. This lower number of SPAC IPO underwriters is consistent with SPAC IPOs being less risky, since more underwriters imply a greater diffusion of risk.

Fig. 1 shows a similar trend in successful IPOs between SPAC and non-SPACs.[8] There are several important time series characteristics to note. First, the most active years are 2005 through 2007. These three years had 54, 35, and 43 SPAC IPOs resulting in 35, 13, and 25 successful acquisitions, respectively. Second, the three lowest frequency years represented are 2003, 2008, and 2009, with three, none, and one filing, respectively, though all of the SPACs in 2003 and 2009 ultimately make an acquisition. In 2008, none of the 39 proposed SPACs were able to undertake an IPO. Third, SPACs are continuing in the present day, though in much smaller measure relative to the peak years. The last three years of our sample, 2009-2011, include only 12 successful filings, though according to Rodrigues (2012), the trend is increasing.

3. Results

In this section we examine the gross spreads and initial returns of SPAC IPOs and provide an analysis of acquirer acquisition announcement returns. In our analysis of IPO initial returns and acquisition announcement returns, we examine raw returns as it is unclear what, if any, benchmark there should be for claims on pools of cash over such a short period.

3.1. Initial returns from the IPO

There is a long literature of IPO initial returns showing significant and positive first-day returns ranging from a mean of 7% in the 1980s to 65% in 1999 and 2000 (see, for example Loughran and Ritter (2004)). More recent evidence from Gao et al. (2013) shows mean initial returns of 11.8% from 2001 to 2009. Schultz's (1993) study of unit offerings shows similar initial returns. We see in Table 2, for the 162 SPACs that complete an initial public offering of their shares, the mean initial return, which is measured from the closing price to the end of trading on day one, is 0.9%. This small but significant return is also present in the subsets of firms that announce an acquisition (1.0%) and actually complete an acquisition (1.2%). Though there is substantial variation in the returns (-4.8% to 23.3%), the small average return is consistent with little valuation uncertainty surrounding the pricing of SPAC shares.

Next, we examine the relation of IPO initial returns to both SPAC characteristics and IPO issue characteristics from an OLS regression. We include the following SPAC characteristics indicating the SPAC's riskiness: percent ownership of manager, percent of IPO proceeds from the private placement, conversion threshold, number of months allowed for acquisition, and percent of proceeds held in trust. We include the following characteristics that are found to be related to IPO underpricing in the literature: a dummy for low-rank lead underwriter (Carter and Manaster (1990)), the number of underwriters (Corwin and Schultz, 2005), and total IPO proceeds (Schultz, 1993). As seen in Eq. (1)

$$\text{IPO initial return} = -.050 + .260\,\text{Own} - .329\,\text{PvtPlc.} - .008\,\text{Conv.} + .001\,\text{Months} + .052\,\text{Trust} + .013\,\text{LowRank} * * * -.001\,\text{NumUW} - .018\,\text{Proceeds} \tag{1}$$

we find that the variation in initial returns is related only to the reputation of the lead underwriter. The positive coefficient on the low-rank dummy is consistent with high-risk SPACs selecting low-reputation underwriters and provides support to the view that initial returns are related to the riskiness of the firm.

In sum, our analysis of IPO initial returns is consistent with SPAC IPOs having very little valuation uncertainty. This result is important to understanding the gross spread analysis which follows.

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[8] We use Jay Ritter's net monthly volume numbers, which excludes penny stock, units, and closed-end funds. This data is found at http://bear.warrington.ufl.edu/ritter/ipoisr.htm.

Table 2
Initial returns to SPAC IPOs.
This table shows descriptive statistics for the IPO initial return, which is the percent change in filing price to the closing price at the end of the first day of trading.

	Mean	Median	Min.	Max.	N
All that complete an IPO	0.9%***	0.1%***	−4.75%	23.3%	162
All that announce an acquisition	1.0%***	0.1%***	−4.75%	23.3%	137
All that complete an acquisition	1.2%***	0.0%***	−4.75%	23.3%	87

*** Represents statistical significance at the 1% level.

3.2. Gross spreads

In Table 3 we examine the characteristics of SPAC underwriting discounts by proposed proceeds amount. The mean underwriting discount for SPACs that successfully complete an IPO is 7.1%. This spread amount is essentially the same as gross spreads of non-SPAC IPOs (see Chen and Ritter (2000)). Further the mean SPAC IPO discounts in each IPO proceeds category is very similar to the mean discounts for U.S. IPOs in Abrahamson et al. (2011). Excluding our smallest category (of proceeds less than $25 million, which they do not examine) we find that mean underwriting discounts are 7.0% for transactions from $25 to $99 million, 6.9% for transactions from $100 to $499 million, and 5.7% for transactions of $500 million or more; the means from Abrahamson et al. (2011) are 6.98%, 6.76%, and 5.12%, respectively. Further, the percentage of transactions that employ a flat 7% underwriting discount for the biggest two proceeds categories, $25 million to $99 million and $100 million to $499 million, is 39% and 78% respectively, and is 50% for the entire sample of successful SPAC IPOs. Fig. 2 shows that the vast majority of underwriting discounts are above 6.5%, with less than 20% of discounts being less than 6.5%. This evidence is consistent with Chen and Ritter's (2000) argument that spreads are above competitive levels due to stickiness of the spread without regard to proceeds amount. From page 1106 of Chen and Ritter (2000):

> "We argue that the spreads for most deals above $30 million are above competitive levels. One reason for this opinion is that the spreads are much higher than elsewhere in the world. A second reason is that if spreads were determined primarily by costs, the average spreads on $80 million deals would be lower than on $20 million deals. But they are not. And if costs were the main determinant of spreads, $40 million deals by risky companies would have higher spreads than $40 million deals by relatively easy to value firms. But they do not."

Additional evidence consistent with spreads being above competitive levels is 1) the emergence of deferred discounts and 2) the lack of differences in spreads between SPAC and non-SPAC IPOs, noteworthy given the large difference in complexity between these two kinds of IPO. First, deferred discounts do not appear in SPACs until April 2005, when they quickly become standard. By September 2005 almost all discounts are partially deferred. Deferred discounts are structured such that the investment bank receives part of the spread up front and the remainder only if an acquisition is completed — the deferred part is typically about half the spread amount. Thus, the emergence of deferred discounts, with no corresponding increase in the sum of the spreads to compensate underwriters for the delay in payment, is consistent with spreads not being at competitive levels. It appears that under competitive pressure investment banks can operate at spread levels significantly lower than the usual seven percent.

Second, we posit that investment banker costs are less in SPAC IPOs than in a conventional IPO. Investment bankers serve two main functions, one related to selling (valuing the issuer, building a book, and selling IPO shares), and one precautionary (providing a "deep pocket" motivated by prospective liability to perform due diligence and ensure the accuracy of offering documents). As to the first

Table 3
IPO underwriting discount characteristics.
This table presents analysis of the underwriting discount by total IPO proceeds, which is the sum of the IPO proceeds amount and the amount raised in the private placement at the IPO. We report numbers for all successful SPAC IPOs and, below, for all SPACs filing an S-1 in parentheses. Column (4) reports the percent of IPOs that report a 7% underwriting discount. Column (5) shows the mean deferred portion of the discount. Column (7) presents the mean Carter–Manaster rank of the lead manager. Total IPO proceeds is the sum of IPO proceeds and private placement proceeds.

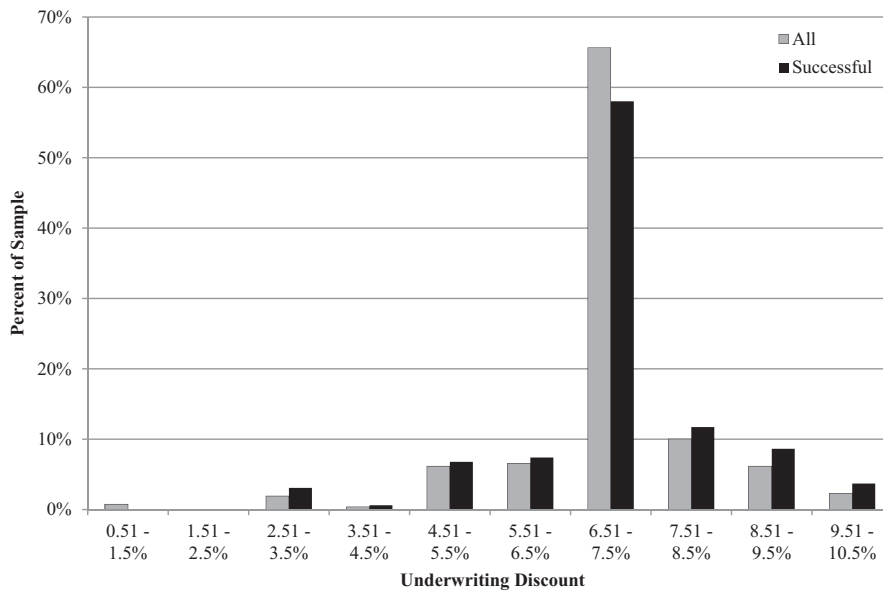| (1) Total IPO proceeds	(2) Number of S-1 filings	(3) Mean under-writing discount	(4) % with 7.0% discount	(5) Deferred portion of the discount	(6) Initial returns	(7) Rank of lead manager	(8) # of under-writers
Proceeds < $25	16	8.7%	0%	0.7%	1.9%	2.0	1.7
	(17)	(8.7%)	(0%)	(0.8%)		(2.1)	(1.6)
$25 ≤ proceeds < $100	79	7.0%	39%	2.1%	1.1%	3.6	2.4
	(109)	(7.0%)	(44%)	(2.3%)		(3.9)	(2.3)
$100 ≤ proceeds < $500	64	6.9%	78%	3.0%	0.4%	7.8	2.7
	(125)	(6.8%)	(83%)	(3.1%)		(7.8)	(2.3)
Proceeds ≥ $500	3	5.7%	0%	3.4%	0.1%	9.0	2.0
	(8)	(6.3%)	(38%)	(3.4%)		(8.9)	(2.3)
All	162	7.1%	50%	2.4%	0.9%	5.2	2.4
	(259)	(7.0%)	(60%)	(2.6%)		(5.9)	(2.2)

Fig. 2. Underwriting discounts for SPAC IPOs.

Table 4

Returns to SPACs at the acquisition announcement.

Panels A and B show the acquirer acquisition announcement return, which is the percent change in the SPACs unit price from the trading day prior to the acquisition announcement to the trading day after the acquisition announcement. Panel A divides the completed acquisitions into the target's public status as defined by SDC. In panel B we compare the returns from SPAC acquirers to those of non-SPAC acquirers. We restrict comparison acquisitions by requiring targets of the same public status (public or non-public), and we require that the relative size of the target to the acquirer be greater than 5%. In each row we insert additional restrictions: industry restrictions (by two or three-digit SIC codes), time restrictions (the announcement day of the deals must be within 365 or 730 days of each other), and deal size restrictions (the size of the SPAC acquirer's target must be either between 1.5 and .75 or between 2 and .5 of the non-SPAC acquirer's target). In panel B we report the cumulative return for SPAC acquirers in column (2) and the return to non-SPAC acquirers in column (3). In the remaining columns of panel B we report the results for the matched transaction that is the closest in target size as the first number in the cell, with the number underneath including all transactions that meet our restrictions without the restriction of the closest in deal value. Column (4) reports the difference in announcement returns in SPAC and non-SPAC acquires and column (5) presents the p-value from a t-test of the difference in means.

Panel A. Acquisition announcement return $(-1, +1)$					
(1)	(2) Mean	(3) Median	(4) Min.	(5) Max.	(6) N
All that announce an acquisition	3.7%***	1.6%***	−24.8%	52.2%	137
All that complete an acquisition	5.5%***	2.4%***	−10.0%	52.2%	87
Target is a joint venture	3.5%	3.5%	3.5%	3.5%	1
Target is private	5.4%***	2.1%***	−10.0%	52.2%	57
Target is public	4.9%**	3.8%	−1.4%	13.2%	8
Target is a subsidiary	5.8%**	2.7%***	−1.3%	42.2%	21

Panel B. Comparison of SPAC and non-SPAC acquirer acquisition announcement returns					
Matching criteria	SPAC acquirers	Non-SPAC acquirers	Diff.	p-Value	N
2-Digit SIC code	5.5%***	1.7%*	3.8%	.008	87
		2.0%***	3.5%	.002	3525
3-Digit SIC code	5.4%***	1.7%**	3.8%	.006	85
		1.8%***	3.6%	.003	2502
2-Digit SIC; within 2 years	5.4%***	1.7%**	3.7%	.008	85
		1.9%***	3.5%	.004	2183
2-Digit SIC; within 1 year	5.5%***	1.6%	3.9%	.011	81
		2.0%***	3.5%	.009	1373
2-Digit; within 2 years; .5× to 2× deal value	5.0%***	1.6%*	3.4%	.016	79
		1.5%***	3.4%	.003	978
2-Digit; within 2 years; .75× to 1.5× deal value	4.8%***	1.8%*	3.0%	.040	73
		1.7%***	3.2%	.009	644
3-Digit; within 1 year; .75× to 1.5× deal value	6.1%***	1.2%	4.9%	.016	48
		1.1%**	5.0%	.007	221

*** Represents statistical significance at the 1% level.
** Represents statistical significance at the 5% level.
* Represents statistical significance at the 10% level.

task, and directly related to the Chen and Ritter (2000) quote above, valuing a SPAC should be easier than a non-SPAC because a SPAC has no operating assets. Our evidence on initial returns is consistent with SPAC IPOs exhibiting very little valuation uncertainty. Further, we presume that it is easier for the underwriter to build a book if the corporation is easier to both value and explain to investors. Finally, a SPAC offering poses relatively low liability risk for the underwriter. Because the corporation is an empty shell, the prospectus is largely boilerplate with relatively few facts to verify or to create the risk of liability. For these reasons, we presume that the SPAC underwriting process should be much less expensive than in a typical IPO. Yet gross spreads are very similar to those found in non-SPAC IPOs, consistent with non-competitive forces driving underwriter spreads.

3.3. Returns from the acquisition announcement

We examine the univariate statistics of acquisition announcement returns in Table 4. We cumulate returns from the day prior to the announcement to the day after the announcement. The mean announcement return is 3.7% for the 137 SPACs that announce an acquisition and 5.5% for the 87 that then complete an acquisition. When we divide the completed transactions by target public status, we see consistent results across all public status types: returns are 5.4% for (57) private targets, 4.9% for (8) public targets, 5.8% for (21) subsidiary targets, and 3.5% for one target that is a joint venture. These returns are about twice as large as those presented in previous studies. For example, in a large sample of acquisitions from 1992 to 2009 Netter et al. (2011) show mean announcement returns for acquirers of public and private targets to be −2.1% and 2.9%, respectively.

We explicitly test the difference in announcement returns between SPACs and more typical acquirers in panel B of Table 4 by examining a matched sample of non-SPAC acquirers. We collect a sample from SDC of 10,926 completed acquisitions by non-SPAC acquirers listed on the NYSE, Nasdaq, or AMEX from 2002 to 2011, and restrict the sample to relatively significant transactions of private, public, and subsidiary targets.[9] Each transaction from this sample must match the target public status from the SPAC sample — whether the target is listed on a public exchange or not.

In each row of panel B we introduce additional restrictions and report the match that is closest in deal size in the top of each cell; the number below this one is the relevant statistic from all matches. First, we require targets be in the same industry. We are able to match all 87 completed SPAC acquisitions to a non-SPAC acquisition by the 2-digit SIC code and 85 by the 3-digit SIC code. The difference in returns ranges from 3.5% to 3.8%. This difference of SPAC returns over typical returns is significant at the 1% level. Second, we introduce a time restriction. We find matches for 81 (85) of the 87 SPAC transactions when we restrict matches to within one (two) year(s) of the SPAC acquisition. The SPAC returns range from 3.5% to 3.9% higher than the time and industry matched sample. The p-value of the difference in means is never more than .011. Last, we match by time, industry, and size. Our most restrictive matching criteria is that matching transactions be in the same 3-digit SIC code, within one year of the SPAC announcement date, and between .75 and 1.5 times the size of the deal value of the SPAC's target. Using this restriction, we find 221 total matches and 48 matches when we take the closest transaction in deal size. SPAC acquirers experience returns that are 4.9% higher than that of the matched sample. This difference is significant at the 5% level. For the sample that does not take the closest deal in size the difference is 5% and is significant at the 1% level. In sum, SPAC acquisition announcement returns are at least 3% higher than the matched samples and the difference is always significant.

In Table 5 we examine acquirer announcement returns in a multivariate setting, controlling for both characteristics known to influence acquirer returns and SPAC characteristics. In Model (1) we control for four characteristics shown to influence acquisition announcement returns: the size of the acquirer (total IPO proceeds), the relative deal size, the method of payment, and the public status of the target.

We use total IPO proceeds as a proxy for the market value of the acquirer, which is shown in the literature to be negatively related to acquirer returns (see, for example, Moeller et al. (2004)). The usual interpretation of the negative relation is that as acquirer size increases so does the manager's propensity to make value-destroying acquisitions. We include relative deal size, the deal value scaled by IPO proceeds, to control for the size of the acquisition. The literature has shown this variable to have a non-predictable relation to the acquirer, though seemingly always significant.

We use a continuous variable that measures stock as a percentage of the method of payment. Similar variables are predictably negative in studies of acquirers of public targets and positive in studies of acquirers of non-public targets. In the case of public targets, using an overvalued security as a means of payment is often the explanation given for the negative relation (see the theoretical framework given in Myers and Majluf (1984) and the evidence provided by Malmendier et al. (2012)). The positive relation when the target is not public is thought to be the result of blockholder formation (a monitor) in the acquirer (Chang, 1998) or the alleviation of target-firm informational asymmetries (Hansen, 1987 and Officer et al., 2009) by forcing target shareholders to share in any overvaluation of the target. In the context of SPACs, there should be no motivation to use stock when the acquirer is overvalued since the underlying value of the acquirer is well known, thus eliminating the rationale of Myers and Majluf (1984). Finally, we include a dummy variable equal to one if the target is publicly traded since acquirer returns to the announcement of the acquisition of a public target have been shown in the literature to be significantly lower than for private targets.

In model (1) we find a positive and significant coefficient on the deal value of the target relative to the total IPO proceeds. More importantly, none of the coefficients on percent of stock used, total IPO proceeds, or the dummy for a public target is significant.

If the negative size-return relation found in the non-SPAC literature was simply mechanical, we would expect to find it here as well. The fact that we do not see it indicates a non-mechanical relationship. If the size-return relation is the result of acquirer or

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[9] We examine transactions in which the target's value is at least 5% of the acquirer's market value of equity.

Table 5

Acquisition announcement return regressions.

This table presents OLS regressions in which the dependent variable is the cumulative announcement return of the acquirer from day −1 to +1, where day 0 is the announcement day. There are two deals for which we could not find a method of payment and these are, therefore, removed from all models. Deal value is the amount paid by the acquirer for the target. Relative size is deal value scaled by total IPO proceeds. Stock % is a continuous variable from zero to one based on the percent of the method of payment comprised of stock. Target is public is a dummy variable equal to one if the target's public status is public and is zero otherwise. Days left is the date the SPAC must make an acquisition by minus the date of the acquisition announcement. Acquisition is a dummy variable equal to one if the announced acquisition is approved and zero otherwise. All other variables are defined in previous tables. In models (5) and (6) we examine only SPACs in which the announced acquisition is completed. Robust standard errors are in brackets.

Dependent variable: Cumulative return	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	.013	.440***	.006	.384**	.515**	1.006**
	[.015]	[.157]	[.007]	[.151]	[.197]	[.413]
Total IPO proceeds	−.000	–	–	.042	.034	−.003
	[.039]			[.049]	[.062]	[.066]
Relative size	.010*	–	–	.007*	.009	.012*
	[.005]			[.004]	[.005]	[.006]
Stock %	.001	–	–	−.004	−.003	−.023
	[.014]			[.013]	[.019]	[.021]
Target is public	.005	–	–	.025	.026	.042
	[.013]			[.016]	[.025]	[.026]
% held in trust	–	−.548**	–	−.512**	−.675***	−1.293**
		[.222]		[.206]	[.250]	[.510]
Unit-to-strike price	–	.061	–	.053	.077	.086
		[.075]		[.070]	[.077]	[.085]
Manager ownership %	–	.696	–	.823*	1.620**	2.511***
		[.661]		[.475]	[.806]	[.908]
Days left	–	.004***	–	.003***	.004**	.005**
		[.001]		[.001]	[.002]	[.002]
Acquisition	–	–	.048***	.021*	–	–
			[.013]	[.011]		
Year fixed effects	No	No	No	No	No	Yes
Adj. R²	.030	.139	.059	.159	.145	.137
F	0.94	3.12**	13.97***	2.17**	3.12***	1.98**
N	133	133	133	133	87	87

*** Represents statistical significance at the 1% level.
** Represents statistical significance at the 5% level.
* Represents statistical significance at the 10% level.

deal specific characteristics (e.g., synergy formation), for which there is little information in our sample, then there is less reason to see the negative relation (or any significant) relation in our sample given the absence of acquirer information and deal synergies. Thus, our results suggest that the negative relation between size and acquirer returns is a function of acquirer or deal-specific characteristics.

No method of payment variable is ever significant in any of our regressions.[10] This non-result is not inconsistent with Myers and Majluf (1984), since there is little uncertainty about the value of the acquirer in this sample. The lack of significance could be interpreted as consistent with Officer et al. (2009), who find no relation between method of payment and bidder returns once the uncertainty of the target is controlled for. Further, given the magnitude of target disclosure in these transactions, these targets should have less asymmetric information about them than typical private targets. Since there is much less uncertainty about the value of our set of acquirers versus a set of non-SPAC acquirers, the lack of significance in payment method is consistent with acquirer valuation uncertainty being an important factor in the relation between acquirer returns and method of payment found in the previous literature.

The insignificance of target public status suggests that acquiring firm characteristics (such as the asymmetric information about the value of the bidder examined by Moeller et al. (2007)) is an important component of the differences in acquirer returns between acquisitions of private and public targets. Yet our small and unique sample setting is not ideal for drawing conclusions about the difference in returns to acquirers of public and private targets.

In model (2) we examine the relation between acquirer returns and firm characteristics specific to SPAC acquirers. We include the percent of proceeds held in trust, the ratio of unit price to stock price, the percent of the SPAC owned by the manager, and the number of days left until the SPAC contract expires for the following reasons. As the percent of the proceeds held in trust goes up, the less likely it will be that shareholders will approve the transaction — opting for a safe exit versus an unsure acquisition. Thus we predict a negative relation between acquirer returns and the trust percent. As the unit-to-strike ratio increases, the more dilutive the acquisition becomes to target shareholders. This dilution should be manifest in the price demanded of target shareholders. Thus, we predict a negative relation between the unit-to-strike ratio and acquirer returns. The remaining two variables deal with managerial motivations.

Examining the motivation of SPAC managers allows for a more fruitful comparison of SPAC and non-SPAC acquisitions. The motivation of the SPAC manager is tested in the following two variables. First, transactions in which the manager has a larger percent

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[10] We use binary variables for stock as a method of payment at 50% and 90% cut-offs as well as using cash, instead of stock, as an independent variable. We also interact relative size and percent of stock in the method of payment to proxy for blockholder formation and find no significant relation with acquirer returns.

at stake should exhibit stronger acquirer returns since the manager has more incentive to make value-increasing acquisitions (see Jensen (1986)). Thus, we predict a positive relation between manager investment percent and acquirer returns. Second, deals completed at the end of the contract period may be the result merely of the manager pushing to close a deal before expiration, so that he can get paid. Thus, worse deals should be made when the manager is most concerned about his payoff and better deals made when there is less pressure to acquire. Thus, we predict a positive relation between the days left until contract expiration and acquirer returns.

In model (2) we find significant coefficients and the predicted relations for only the percent held in trust and the number of days left until contract expiration. The positive coefficient on days left until expiration is consistent with SPACs acquiring higher quality targets more quickly and lower quality targets the closer the expiration of the contract. Also, the negative coefficient on trust percent is consistent with shareholders being more likely to approve an acquisition when they have less in the trust account.

In model (3) we examine whether the market is able to discern whether the acquisition will go through or not by inserting a dummy variable equal to one if the acquisition goes through. Bates and Lemmon (2003) find no difference in the acquirer returns of completed and withdrawn deals, but in SPACs the shareholders are more likely to determine the outcome of the acquisition attempt. We find that the relation between an outcome of completion and acquirer announcement returns is positive and significant at the one percent level. This result is consistent with the eventual outcome being known, in part, at the time of the announcement.

In model (4) we include all of the variables in the previous models. All previously significant coefficients remain significant, and the coefficient on manager investment percent becomes significant. This positive and significant relation between acquirer returns and manager investment percent is consistent with transactions in which the SPAC manager has more personal investment at risk being better valued by the acquirer.

We examine only the 87 SPACs that complete an acquisition in models (5) and (6). Model (6) contains year fixed effects and model (5) does not. We find that relative size is not significant in model (5) though it is significant again in model (6). All other relations are similar to the previous models.

The results from the multivariate analysis of acquisition announcement returns provide the following insights. First, we show a positive relation between acquirer announcement returns and both managerial ownership and time until the termination of the SPAC. These results are consistent with significant agency costs existing even in a setting in which managerial actions are more transparent and are always subject to shareholder vote. Second, contrary to the typical findings of a negative relation between acquirer size and announcement returns, we find no relation between size and returns in a setting in which uncertainty about the value of the bidder is very low. This result is not consistent with a merely mechanical relation between size and acquirer returns. Thus, we find no evidence that size itself causes a manager to be more or less influenced by motives to make bad valuation decisions. Third, we find no relation between acquirer announcement returns and method of payment. Thus, in this setting where there is little uncertainty about the value of the acquirer, there is no significant relation between method of payment and acquirer announcement returns. This non-result is consistent with the basic insight of Myers and Majluf (1984) that method of payment is largely about the value of the bidder and the uncertainty of that value, as in Moeller et al. (2007).

4. Conclusion

We examine SPACs as a unique means of understanding acquisition announcement returns and gross spreads in IPOs. The benefit of this sample is found in the simplicity of the information contained in the SPAC. Since the firm's only asset is cash, and it promises to pay back this cash to its shareholders should it not make an acquisition within the time specified, the value of the firm is much less complex than that of non-SPAC companies. This transparency in valuation allows us to hold the firm more or less constant when examining underwriter spreads and acquisition returns.

We find that the mean SPAC IPO gross spread is 7%, which is very similar to that of non-SPAC IPOs. This result is consistent with, and further bolsters, the argument that gross spreads are illogically sticky, since SPAC IPOs are less complex and more transparent than the typical IPO.

Acquirer announcement returns are about triple that of typical acquisitions. Since these acquirer returns reflect primarily, if only, the valuation split between the acquirer and the target, then the information contained in the return reflects how well managers are able to value the target. Thus, the large difference in returns between SPAC and non-SPAC acquirers is consistent with much of the reduction in value from typical acquisitions coming from sources that SPACs lack —that is, from over estimating synergies or from the revelation of new (and unwelcome) information about the bidder's investment opportunity set.

Acknowledgments

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