Private Targets Acquisition and Industry Asset Revaluation: Evidence from SPACs

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Version: December 2024

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Abstract

We examine industry peers' stock reactions to business combination announcements by special purpose acquisition companies (SPACs). Our findings reveal that industry peers react more negatively when a SPAC experiences a lengthier process. We posit that public investors view a longer SPAC process as a signal of industry asset overvaluation. Furthermore, our results are more pronounced for peer firms with high information asymmetry and those experiencing recent price run-ups. Finally, the market reaction is stronger for SPACs managed by experienced sponsors and for those acquiring targets in the industries specified in their IPO filing prospectuses. Overall, our study highlights how the SPAC negotiation process can serve as an indicator of industry-wide valuations.

Keywords: SPACs, Peers, Revaluation, IPOs, Mergers and Acquisitions

JEL Classifications: G14, G19, G32

1 Introduction

There is growing evidence that corporate actions, such as initial public offerings (IPOs) and mergers and acquisitions (M&As), can have significant effects on the valuation of their industry peer firms. Indeed, these events inform investors about industry-wide trends and misvaluation (Spiegel and Tookes, 2019; Derrien, Fresard, Slabik, and Valta, 2021), heightened competitions (Hsu, Reed, and Rocholl, 2010; Yilmaz, 2023), new investment opportunities (Bradley and Yuan, 2013), anticipation of future acquisitions (Song and Walkling, 2000), and the supply effects of newly public companies (Braun and Larrain, 2009). While corporate actions typically involve lengthy negotiation processes among market participants, little is known about whether the negotiation process conveys industry-level information.[1] In this paper, we propose and investigate whether and how the negotiation process of Special Purpose Acquisition Companies (SPACs) disseminate information to investors regarding industry fundamentals.

The recent rise of SPACs provides a unique setting to examine this question. First, initially established for the purpose of merging with a private entity, SPAC managers (or "sponsors") are subject to a preset deadline, typically spanning 18 to 24 months, to finalize the acquisition deal (Gahng, Ritter, and Zhang, 2023). Failing to meet this deadline forces sponsors to liquidate the SPAC and distribute IPO proceeds to existing shareholders, which reduces their private gains (Feng et al., 2023). Consequently, the time constraint imposes trade-offs for sponsors between dedicating more time to identifying targets with strong fundamentals and the increased risks of deal failure, thereby making the time length of SPAC process material to the public market. Second, SPACs are blank-check companies with no prior operations and their primary objectives are to

[1] On average, it takes three months to complete an IPO (Hanley, 2017) and four months to complete a M&A deal (Offenberg and Pirinsky, 2015).

acquire potentially undervalued targets.[2] Investigating SPACs allow us to focus on targets' fundamentals, while isolating other confounding factors, such as shifts in the industry's competitive structure or strategic synergies, which could otherwise contaminate industry peers' stock reactions. In this paper, we measure the negotiation process of SPACs as the time length between SPAC IPO dates and business combination announcement (*BC announcements*) dates and examine its implications for industry-wide valuations.

The existing literature, however, makes mixed predictions about how investors of industry peers may react to the time length of the SPAC process. The industry revaluation hypothesis suggests that a prolonged SPAC process may signal industry overvaluation, resulting in negative reactions from industry peers. Consider a scenario where a SPAC sponsor seeks to acquire a private target and must decide when to initiate the deal. Conflicts of interest arise between SPAC sponsors, acting on behalf of acquirers, and target managers – with acquirers seeking undervalued targets while targets prefer going public during periods of market overvaluation (Edmans et al., 2012; Loughran and Ritter, 1995; Baker and Wurgler, 2005). If the SPAC sponsor is better informed about the industry fundamentals, the choice solely depends on the cost of waiting versus current industry prices. As the deadline approaches, sponsors may be inclined to compromise on prices to expedite deal finalization. Therefore, if the timing of acquisition depends on deviations of industry prices from fundamentals, a prolonged SPAC negotiation process might reveal information about industry-wide misvaluation to outside investors. Importantly, this prediction is unique to SPACs, as the preset SPAC deadline could potentially lead to SPAC liquidation, thereby incurring agency

[2] Many SPACs explicitly state their goal of identifying undervalued targets in their IPO filings. For example, Landcadia Holdings, Inc., in its Form S-1 filing, describes its acquisition criteria as aiming to "offer a value proposition that is not recognized by the market." CC Neuberger Principal Holdings II states its intention to acquire businesses that are "fundamentally sound but underperforming their potential." As documented by Derrien et al. (2021), the acquisition of undervalued private targets also disseminates information to industry peers.

problems between sponsors and shareholders – an aspect absents in other corporate actions such as IPOs or M&As.[3]

In contrast, the competitive channel suggests that a shortened SPAC process should be associated with more negative reactions from industry peers. Rivals' IPOs often pose a competitive threat to existing public peers (Hsu, Reed and Rocholl, 2010). Specifically, practitioners often cite a significant advantage of going public through SPACs as the accelerated process, particularly for private firms without audited financial statements (Klausner et al., 2022; Gahng et al., 2022).[4] Therefore, the competitive channel predicts that a shortened SPAC process poses a greater competitive threat because rapid access to capital market potentially leaves industry peers with less time to adopt preemptive strategies. However, it is also important to note that the industry revaluation channel and competitive channel may coexist, as argued by Spiegel and Tookes (2019).

To examine these two competing hypotheses, we compile a sample of SPAC business combination announcements between 2010 and 2021 and identify their industry peers prior to the announcements. Our SPAC sample contains 257 business combination announcements, and we include all industry peers with available stock prices to estimate their stock reactions, resulting in a sample of 3,248 distinct public peers. This dataset, structured at the peer-SPAC level, enables us to analyze a total of 50,194 unique stock price reactions of peer-SPAC pairs surrounding the business announcement dates using the conventional event study methodology.

[3] Luo and Sun (2022) model the misaligned incentives between sponsors and investors and argue that SPAC sponsors would prefer bad deals to no deals as the deSPAC deadlines approach. Gahng, Ritter, and Zhang (2023) provide evidence that deals approaching the end of the SPAC life cycle tend to underperform in the stock market, suggesting the occurrence of bad deals at the end of deSPAC periods.

[4] Nevertheless, Gahng et al. (2022) shows that the deSPAC process does not appear to be shorter than traditional IPOs or direct listing. Gahng et al. (2022) and Rose (2022) posit that target mangers may exploit a "regulatory arbitrage opportunity" since the merger law provide a "safe harbor" provision for future sales and profits projections, which does not apply to traditional IPOs or direct listings.

Consistent with the industry revaluation story, we document a negative relation between the time length of SPACs and the cumulative abnormal returns (CARs) of the targets' industry peers. Specifically, a one-standard-deviation increase in SPAC time length is associated with an 82 basis points decrease in the eleven-day stock reactions around BC announcements. While our analyses primarily focus on individual peer reactions to BC announcements, the asset pricing literature often employs portfolio approaches to address potential correlations between firms. Therefore, we categorize peer-SPAC CARs into 257 SPAC portfolios and verify our results using deal-level regressions. Overall, the deal-level regression confirms that our results are not driven by a specific subset of business combination announcements.

To gain further insights into the industry revaluation channel, we explore the heterogeneity in the negative relation between the SPAC time lengths and industry peer reactions. Given that investors rely more on industry-wide news to analyze peers with limited available information (Shroff, Verdi, and Yost, 2017), we propose that public peers with high information asymmetry should experience stronger revaluation when investors observe a prolonged SPAC process within the industry. Our empirical findings confirm this conjecture. The revaluation effect is more negative for firms with more intangible assets, higher analyst forecast dispersion, and those operating in less transparent information environments.

An underlying assumption of the revaluation hypothesis is that the SPAC sponsors possess superior information about the fundamental value of industry assets, leading peer investors to update their prior beliefs based on the SPAC time length. While directly testing this assumption may be challenging, it implies that the industry revaluation effects should be more pronounced for SPACs with more experienced sponsors as investors may view them as a more credible signal for industry misvaluation. To test this conjecture, we manually collect information about sponsors'

prior work experience in the target industry, as well as previous M&A experiences. The results suggest that the revaluation effects are indeed stronger for SPACs with more experienced sponsors. Additionally, we examine a subset of SPACs that disclose their intended industries for mergers.[5] This subset enables us to analyze SPACs committed to conducting mergers within their originally intended industries, thereby mitigating any potential selection bias.[6] Our analysis finds that the negative revaluation effects are primarily driven by the sponsors that remain committed to targets within the industries they initially choose.

We offer additional evidence supporting the industry revaluation channel through two additional tests. First, we estimate the prior industry runups before BC announcements. Under the industry revaluation story, we expect that peers with higher price run-ups will experience greater revaluation during the BC announcements. Second, given insiders' ability to detect misvaluations (Derrien et al., 2021; Lee, 2021), we examine insider trading activities among peers during the BC announcement quarter. Our findings reveal that peers within industries with a prolonged SPAC process exhibit more insider sales and fewer insider purchases, consistent with the notion that a prolonged SPAC process indicates industry overvaluation.

Finally, while our prior results align with the industry revaluation channel, we also shed light on the competitive channel. Exploring industry-level competitions, we find that the negative relation between SPAC length and peer reactions attenuates in competitive industries. These results suggest that BC announcements indeed convey information about industry competitions but are overshadowed by industry revaluation effects. This finding aligns with Spiegel and Tookes

[5] SPACs are not allowed to have pre-identified target companies during IPOs. However, they are permitted to disclose the intended industries in which they plan to conduct mergers.

[6] For example, even sophisticated ones investors may be attracted to industries with extreme past performance (Kempf, Manconi, and Spalt, 2017). Therefore, an alternative explanation is that low quality sponsors may spend more time looking for targets but end up self-selecting into overvalued industries.

(2019) that industry-wide information and competitive effects coexist in peers' reactions to IPOs, with the competitive effect being of secondary importance.

Our study contributes to the existing literature on how corporate actions disseminate information to outside investors and. enhance informational efficiency. Previous studies in IPOs document that observing industry rivals' equity financing activities leads to the incorporation of competitive effects, industry misvaluation, and supply effects into peers' stock prices (Akhigbe et al., 2003; Braun and Larrain, 2009; Hsu et al., 2010; Bradley and Yuan, 2013; Spiegel and Tookes, 2019). Similarly, rivals' M&A activities affect firms' stock prices as investors adjust their perceptions of future acquisition probabilities, control rights, mispricing, and competitive threats (Song and Walkling, 2000; Servaes and Tamayo, 2014; Derrien et al., 2021; Yilmaz, 2023). SPACs offer a novel interaction of these domains as SPACs are considered as a hybrid between an IPO and a merger deal (Dimitrova 2017). Our study contributes to the existing literature by highlighting that SPAC sponsors also exploit and take opportunistic actions on industry misvaluation. However, due to the constraints imposed by the preset deadline embedded in SPAC contracts, the time length of the SPAC process conveys valuable information to outside investors.

Our research also adds to the recent literature on the economic frictions behind SPACs. Recent studies show that SPACs exhibit poor post-merger stock performance due to their high costs compared to going public through traditional IPOs (Klausner et al., 2022), and economic frictions such as misaligned interests and agency issues between SPAC sponsors and investors partially contribute to these high costs (Gahng et al., 2022; Feng et al., 2023). Particularly, Luo and Sun (2022) model the misaligned incentives between sponsors and investors and provide evidence that sponsors are more likely to initiate unprofitable deals as SPACs approach their

deadlines. Our study suggests that the economic frictions not only pressure sponsors to seek low quality targets, but also compromise on the timing of industry conditions.

2 Literature Review and Hypothesis Development

We hypothesize that the time length between a SPAC IPO and its business combination announcement carries valuable information about the level of industry misvaluation. Consequently, outside investors can update their prior beliefs after observing the business combination announcements. Our hypothesis builds on the following two assumptions. First, economic frictions exist between SPAC sponsors and investors; and second, managers, being better informed about industry fundamentals, indeed take proactive actions to exploit industry-wide misvaluation. We discuss both rationales below, starting with the economic frictions of SPACs.

2.1 The Economic Frictions of SPACs

The recent surge in SPACs has gathered significant attention from practitioners, academics, and policymakers. SPACs, are shell companies established by sponsors, and consists of two stages. The first stage, known as the SPAC stage, spans from the SPAC IPO date and the completion of a business combination. The second phase, referred to as the deSPAC stage, begins on the first trading day following a successful merger. Typically, SPAC sponsors have between 18 to 24 months to find and complete these business combinations during the first stage. However, the preset deadlines can introduce economic frictions; failing to finalize a business combination results in the liquidation of SPACs, leaving sponsors with nothing for their efforts. Additionally, SPAC IPO underwriter also have strong incentives to push for the completion of business combinations since a portion of their underwriter fees are deterred until the consummation of the business

combination (Dimitrova 2017).[7] As a result, agency problem exists, where the interests of sponsors and SPAC shareholders are not always aligned.

For example, Dimitrova (2017) finds that an increased SPACs' sponsors' ownership is detrimental to performance. This finding is consistent with Jenkinson and Sousa (2011), who suggests that sponsors may purchase shares from "No" voters to facilitate the business completion, thereby securing their promised compensation. Gahng et al. (2022) argue that the preset deadline may pressure sponsors into pursuing potential value-destroying acquisitions. However, the redemption option owned by SPAC shareholders is designed to mitigate these frictions. Luo and Sun (2022) model the misaligned incentives between sponsors and investors and argue that SPAC sponsors would prefer bad deals to no deals as the deSPAC deadlines approach.[8] Estimating the agency costs using a structural model, Feng et al. (2023) quantify the magnitudes of agency costs and document that a 19% difference in expected returns across the lowest and highest quintiles in agency costs.

2.2 Evidence on Peers' Reactions to Corporate Events

In a perfect financial market, where managers do not have an informational advantage over individual investors, investors do not rely on rivals' corporate events to revalue stock prices. However, existing studies document that rivals' M&As indeed contain valuable information about the stock prices of industry peers. Song and Walkling (2000) find that industry peers' stocks rise when a target is acquired within the industry, suggesting an increased likelihood of becoming future targets. Servaes and Tamayo (2014) posit that investors revalue industry peers based on a

[7] One third of the underwriter commission is payable following the SPAC IPO dates and the rest of balance are deferred to the consummation of the business combination (Pinedo 2022).

[8] However, Luo and Sun (2022) and Gahng, Ritter, and Zhang (2023) do not differentiate whether the stock performance is driven by idiosyncratic factors (such as low-quality targets) or industry mispricing. If the "bad quality" is idiosyncratic rather industry-wide, we should not observe industry revaluations by peer investors.

potential alleviation of rivals' agency problems. Specifically, they document positive stock reactions when another rival is subject to a hostile takeover attempt. Derrien, Fresard, Slabik, and Valta (2021) document a revaluation spread– acquirers' managers favor private targets when public industry peers are overvalued, indicating that the choice between private and public targets contain industry-wide misvaluation. Exploring the variation in U.S. targets by foreign acquirers, Yilmaz (2023) document that foreign acquisitions intensify industry competitions, resulting in negative reactions by industry peers. It reveals the competitive effects behind these acquisition announcements.

Furthermore, security issuances also convey valuable information to peers' investors. On average, incumbents react negatively to peers' IPO decisions. Akhigbe et al. (2003) and Hsu, Reed, and Rocholl (2010) argue that IPOs provide newly public firms with better access to the capital market, leading to stock revaluation among peers due to competitive effects. Spiegel and Tookes (2020) empirically test peers' reactions to IPOs and suggest that the information regarding industry-level misvaluation dominates the competitive IPO effects in explaining peers' negative stock reactions. Specifically, SPACs represent a hybrid of M&As and IPOs. To our best knowledge, this is the first study to explore the industry-wide information revealed by SPACs' business combination announcements.

2.3 Hypothesis Development

We posit that the revaluation of industry peers around the BC announcements reflect the arrival of new information regarding industry-wide misvaluation. Our conjecture builds on the assumption that SPAC sponsors possess superior knowledge about industry fundamentals compared to other individual investors. If the time constraints of SPACs prevent sponsors from exploiting their informational advantage regarding industry mispricing, then the BC

announcements may reveal this information to outside investors, resulting in a revaluation of peers stocks.

Particularly, SPAC sponsors often encounter conflicts of interests with target company managers regarding the industry conditions. Anecdotal evidence suggests that SPAC sponsors seek to acquire undervalued targets to maximize shareholder values. By contrast, because the deSPAC process serves as targets' IPOs, they have strong incentives to launch IPOs during "hot market" period, where market or industry pricing are relatively higher than fundamentals (Baker and Wurgler, 2002). Nevertheless, sponsors must trade off the costs of waiting (e.g., increased chance of liquidation) and a cooling industry condition. Given the pressure from 2-year deadline, sponsors should be more likely to compromise on the industry conditions to expedite the deal conditions. As a result, an increased time length in SPAC process may signal industry overvaluation. In Appendix A, we provide a theoretical model illustrating why a longer SPAC process signals a relatively lower industry fundamental (thus higher industry overvaluation). Therefore,

Hypothesis 1 (*industry revaluation hypothesis*): if sponsors have superior information regarding industry fundamentals and the preset deadlines of SPACs pressure sponsors to compromise on industry overvaluations, a prolonged SPAC process trigger negative revaluations of industry peers by outside investors.

The industry revaluation hypothesis has several additional implications. First, the industry revaluation should be more pronounced among peers with high information asymmetry or relatively worse information environment. This is attributed to outside investors depending more on information from industry peers when firm-specific information is limited (Shroff et al., 2017). Second, the revaluation effects should be more pronounced for SPACs established by highly capable sponsors, such as those with greater experience, who possess more accurate information

regarding industry fundamentals. Consequently, investors may view the time lengths of SPACs as a more credible signal of industry misvaluation. Lastly, the revaluation effects should be stronger for industry peers that have recently experience priced runups, as these are more likely to be overvalued by existing investors. Therefore,

Hypothesis 1a: the industry revaluation effects should be more pronounced among peers with high information asymmetry, SPACs led by more experienced sponsors, and peers that have recently experienced price run-ups.

Second, an alternative hypothesis suggests that SPACs accelerate the IPO process and lower the barriers of going public (Cumming, Hass, and Schweizer, 2014; Gahng et al., 2023). Since rivals' IPOs pose a competitive threat to existing public peers (Hsu et al., 2010), a shortened IPO process may lead to larger value losses by industry peers. Furthermore, Gahng, Ritter, and Zhang (2023) document that SPACs that are completed close to the deadline are often of lower quality and tend to underperform in the stock market. If lower quality targets pose less competitive threats to industry peers, this should also imply a positive relation between time length and industry peer reactions. Therefore,

Hypothesis 2 (*competitive hypothesis*): if an accelerated SPAC process pose greater competitive threats to existing industry peers, a shortened SPAC process should lead to greater value losses by industry peers.

3 Sample Selection and Variable Construction

3.1 Sample Selection

We begin by obtaining a sample of SPACs that have made business combination announcements. We first collect data on 1,078 SPAC IPOs between January 2010 and December 2021 from the Refinitiv [formerly Securities Data Company (SDC)] New Issue Database using the

"Blank Check (SPACs) Involvement" indicator variable. We start in 2010 because SPACs go public after 2010 have been fundamentally different from pre-2010 SPACs (Gahng et al., 2023).[9] To remain in the sample, a SPAC IPO should meet the following restrictions. First, it must be a U.S. SPAC IPO. Second, we exclude SPACs traded in over-the-counter (OTC) markets. Thirdly, we require available stock price information in CRSP. This filtering results in a final sample of 882 SPAC IPOs from 2010 to 2021.

To obtain the SPAC merger announcements, we extract all transactions made by SPACs acquirers the between 2010 and 2021 in the Refinitiv Merger and Corporate Transaction database. We keep all merger and acquisition transactions, regardless of their completion or withdrawal status.[10] Consistent with prior studies (e.g., Edmans, Goldstein, and Jiang, 2012), we exclude acquisitions of partial interest, exchange offers, buybacks, and recapitalizations. Additionally, we only consider targets incorporated in the U.S. This process yields a sample of 344 business combination announcements made by SPAC acquirers between 2010 and 2021.

We merge the SPAC IPO dataset with the SPAC M&A dataset to construct our final SPAC business combination sample. We further exclude financial targets (SIC codes between 6000 and 6999) and utility targets (SIC codes between 4900 and 4999). We also require that each SPAC has at least one industry peer sharing the same 3-digit SIC code. The resulting SPAC sample consists of 257 business combination announcements between 2010 and 2021.To ensure accuracy, we manually verify this sample using the SEC Edgar database.

[9] These fundamental changes after 2010 include more SPACs are traded on more organized stock exchanges, more prestigious investment banks such as Goldman Sachs, and Morgan Stanley, and SPAC shareholders are allow to approve a deal while redeem shares separately. For more details, please referred to the Appendix A2 in Gahng, Ritter, and Zhang (2022).

[10] It is conventional in the M&A literature to keep all M&A announcements including withdrawn deals. For example, Edmans, Goldstein, and Jiang (2012) also keep withdrawn M&A deals. Nevertheless, in our robustness section, we show that our results remain quantitatively and qualitatively similar if we drop these withdrawn deals.

Next, we construct peer-SPAC pairs by identifying industry peers that share the same 3-digit SIC codes as the target firms, using information from the Refinitiv New Issue Database.[11] We restrict the peer sample to have stock return information from CRSP as well as financial information from Compustat. We eliminate industry peers that their stock returns are not actively traded before business combination announcements by requiring that there are at least 30 daily stock returns in the year preceding the announcements. This sample selection procedure results in a sample of 3,248 distinct peers, and 50,194 peer-SAPC pairs.

For each event in the SPAC business combination sample, we retrieve financial information and stock information from the most recent quarter available in Compustat and CRSP, respectively. To measure analyst coverage, we obtain financial analyst information from the Thomson Reuter I/B/E/S summary file and calculate coverage based on the number of analysts issuing reports for a firm. Institutional ownership data is retrieved from the Thomson Reuters' CDA/Spectrum Institutional (13F) Holdings database. In cases where a firm lacks analyst coverage or institutional investor information, we follow prior literature and set missing values to zero (Chang, Dasgupta, and Hilary, 2006; Gao and Ritter, 2010). The insider filing data are from the Refinitiv insider filings database.

3.2 Variable Construction

3.2.1 Measuring Peers' CARs to Business Combination Announcements

In this study, we examine stock reactions of industry peers to the business combination announcements by estimating their cumulative abnormal returns (CARs) around these

[11] For public incumbents, we prioritize the use of historical SIC code from Compustat and replace it with the SIC codes from CRSP if it is missing in Compustat. We do so because Kahle and Walkling (1996) argue that SIC codes are more accurate on Compustat than CRSP.

announcements. This approach is consistent with previous studies analyzing peer effects in the M&A and IPO literature (e.g., Hsu et al., 2010; Derrien et al., 2022).

To estimate the abnormal returns, we consider an eleven-day event window (-5 to +5) centered around the announcement dates of industry peers belonging to the same 3-digit SIC code industry as the target firms. We calculate abnormal returns as the difference between the realized returns and the expected returns, which are estimated using a four-factor model comprising a market factor, SMB, HML, and UMD (Fama and Frech, 1993; Carhart 1997). The estimation period for the expected returns spans 365 days before the announcement dates and ends 30 days before. To ensure an unbiased estimation, we require a minimum of 30 daily returns during the estimation period. Therefore, the cumulative abnormal returns (CARs) of industry peer i to SPAC j's business combination announcement date in quarter q are calculated as follows:

$$CARs_{i,z,j,q} = \sum R_{i,z,j,q} - E\left[R_{i,z,j,q}\right], t \in (-5, +5)\,. \tag{1}$$

Where, $R_{i,z,j,q}$ and $E\left[R_{i,z,j,q}\right]$ are industry peer i's realized returns and expected returns in response to SPAC j' announcement in industry z in quarter q. In our analyses, we use various event windows, including (-3 to +3) and (-1 to +1), in addition to the main event window (-5 to +5), to test the robustness of our results.[12] To ease the interpretation, we multiply the cumulative abnormal returns by 100.

3.2.2 Main Independent Variables

Our interested independent variable, $Length_{j,q}$, represents the number of days between SPAC IPO dates and business combination announcement dates. To address the skewness in the

[12] The prior peer IPO effects papers use different event windows. For example, the shortest event window that Hsu et al. (2010) use is (-5,+1) and (-10,+1) and also use up to (-10,+20) in their study. Spiegel and Tookes (2019) use (-10,+1). Akhigbe et al. (2003) use (0,+1) and (+2,+10). Using a short event window provides a more conservative estimate of industry revaluation effects but may potentially underestimate the actual peer IPO effects. Nevertheless, our results are not sensitive to using different event windows.

distribution of this variable, we take the logarithmic value of $Length_{j,q}$. However, our results remain consistent if we use the original variable, $Length_{j,q}$, in all our analyses. Alternatively, we construct a dummy variable, $D(Early)_{j,q}$, which equals one if a SPAC announces a merger within 180 days after its IPO. In our sample, 103 out of 257 (40.1%) SPACs make announcements within this timeframe following SPAC IPOs.

3.3 Summary Statistics

Panels A and B in Table 1 present the summary statistics for the characteristics at the SPAC level and peer-SPAC level, respectively. There is substantial variation in the time length between SPAC IPOs and the subsequent business combination announcements. On average, it takes 292 days for a SPAC to announce the acquisition of a private target following its IPO, with a median being 229 days. The fastest SPAC in our sample takes only 60 days to announce a merger, while the slowest one takes 728 days.

Moving to Panel B, the mean of 11-day CARs for industry peers' reactions is -71 basis points and statistically significant at the 1% level. The magnitudes of CAR(-3,+3) and CAR(-1,+1) are relatively smaller (-50 bps and -23 bps, respectively) compared to CAR(-5,+5), but both are statistically significant (p-values<0.01). In untabulated results, we further sort the peer-SPAC CAR(-5,+5) into 257 equally-weighted (EW) and value-weighted (VW) portfolios based on the average CAR(-5,+5) for each business combination announcement. The means of EW and VW portfolio CAR(-5,+5) are also negative (-94 bps and -97 bps, respectively) and are significant at the 1% level.

The observed negative CARs corroborate findings from existing literature. For example, they align with the industry revaluation story as in Spiegel and Tookes (2019) and Derrien et al. (2022). Specifically, these studies document that IPOs and acquisition announcements by private

rivals result in negative stock revaluations among public companies. Alternatively, these findings are also consistent with the competitive stories, where IPOs and acquisitions of private rivals may pose competitive threats on existing public companies (Hsu et al., 2010; Yilmaz, 2023).

[Place Table 1 About Here]

Figure 1 depicts the distribution of SPAC IPOs and business combination announcements by calendar year, confirming the observation made by Gahng et al. (2023) that there has been a surge in SPACs in 2020 and 2021.

[Place Figure 1 About Here]

4 Empirical Results

4.1 Baseline Results

In this section, we analyze the relation between the time length to SPACs' business combination announcements and the industry peers' stock market reactions. Specifically, we estimate the following model:

$$CARs_{i,z,j,q} = \alpha + \beta_1 Ln\left(Length_{j,q}\right) + \psi_{i,z,q-1} + \chi_{z,q} + FEs. + \varepsilon, \quad (2)$$

Where, $CAR_{i,z,j,q}$ measures the cumulative abnormal return of public peer *i* during the (-5, +5) window around SPAC j's announcement of acquisition in industry z and in quarter q. $Ln(Length_{j,q})$ is the logarithmic value of the number of days between SPACs' IPOs and the acquisition announcement dates. $\Psi_{i,z,q-1}$ is a vector of public peers' characteristics, including assets, market-to-book ratio, leverage, cash flows, return volatility, institutional ownership, and analyst coverage. We also control for peers' price runups, which are measured by the 90-day market-adjusted returns before the merger announcements. $\chi_{z,q}$ is a vector of SPAC deal-level control variables such as the total IPO proceeds, number of bookrunners, merger deal value, deal

type (pure cash or stock deal), and SPACs' 90-day market-adjusted returns prior to the announcements.

In all specifications, we include industry-quarter fixed effects to control for any unobserved time-varying industry-wide investment opportunities that can simultaneously affect peers' reactions and de-SPAC decisions. Additionally, as shown in Figure 1, our sample of SPACs is concentrated in the years between 2020 and 2021. To compare peers' stock reactions within the same SPAC cohort year and mitigate concerns about differences across SPAC cohorts, we add SPAC IPO year fixed effects. To address potential correlations of peers' cumulative abnormal returns (CARs) within a given industry, we cluster the standard errors at the 3-digit SIC industry level.

The industry revaluation hypothesis predicts that β_1 should be negative and significant since investors would expect sponsors to compromise on the industry timing as the 2-year deadline approaches, signaling industry overvaluation. By contrast, the competition channel in Hsu et al. (2010) suggests that an accelerated SPAC process poses a greater competitive threat to industry peers, leading to a positive coefficient of β_1.

[Place Table 2 About Here]

Table 2 presents the results. In column (1), we incorporate our main interested variable, $Ln(Length_{j,q})$, along with fixed effects for SPAC, industry-by-quarter, and peer to control for potential heterogeneity. The coefficient of $Ln(Length_{j,q})$is -1.33 and is statistically significant at the 1% level. In terms of the economic significance, a one-standard-deviation increase in $Ln(Length_{j,q})$ is associated with a decrease of 82 bps in CARs, which is economically significant given the mean of CARs equals -71 bps. In column (2) we further include controls for peer-level and SPAC deal-level characteristics, and $Ln(Length_{j,q})$ remains negative and statistically

significant (t-statistic: -5.85). Finally, column (3) incorporates peer by quarter fixed effects to further capture the time-varying peer characteristics. The negative and significant coefficient of $Ln(Length_{j,q})$ remains robust (t-statistic: -16.35).

Moving to columns (4)-(6), we present our results using the dummy variable, $D(Early)_{j,q}$, which equals one if a SPAC announces a deal within 180 days following its IPO. Specifically, we employ the same specifications as in columns (1) to (3) by replacing $Ln(Length_{j,q})$ with $D(Early)_{j,q}$. We consistently find a positive and significant coefficient for $D(Early)_{j,q}$, which is consistent with the results in columns (1) and (3) that early business combination announcements convey less industry overvaluations to the public market.

To visualize the relation between $Ln(Length_{j,q})$ and peers' reactions, we present the bin-scattered plots of the SPAC time length and the CAR(-5,+5) in Figure 2 by excluding and including firm-level controls in Panels A and B, respectively. In both figures, there is a strong negative correlation between the number of days to merger announcements and the industry peers' stock reactions.

[Place Figure 2 About Here]

Taken together, our results support the industry revaluation story, suggesting that the time lengths between SPAC IPOs and merger announcement dates inform investors about industry-wide misvaluation.

4.2 Robustness Checks

To ensure the robustness of our findings, we conduct a battery of robustness tests in Table 3. Specifically, in panel A, we consider peers' revaluations computed over different windows: a 7-day event window of CAR(-3,+3) in columns (1) to (4) and a 3-day window of CAR(-1,+1) in

columns (5) to (8). The coefficients of $Ln(Length_{j,q})$ and $D(Early)_{j,q}$ remain consistent with the baseline results in Table 2.

[Place Table 3 About Here]

Moving to Panel B, we perform additional tests to verify the robustness in different subsamples. First, we remove 41 deals (33 withdrawn and 8 pending deals) that were either withdrawn or pending as of February 2023. The results in columns (1) and (2) remain consistent with our baseline findings, suggesting that these future deal statuses do not affect our results.

Second, to mitigate concerns regarding the generality of 3-digit SIC industries, we refine our findings by excluding industries with more than 100 industry peers in columns (3) and (4). Although this exclusion reduces the number of peer-SPAC pairs to 3,131, the magnitude and significance of the coefficients on $(Length_{j,q})$and $D(Early)_{j,q}$ become stronger. This implies that the impact of industry revaluation upon merger announcements is particularly important within more narrowly defined industries. A plausible explanation is that peers within narrower industries tend to exhibit greater similarity, making merger announcements more informative about peer revaluations.

4.3 SPAC Deal-level Regression

Our analysis primarily focuses on individual peers' reactions to business combination announcements, which allow us to explore the rich variations in peer-SPAC dimension. However, the asset pricing literature commonly employs a portfolio approach to address potential correlations between firms. Additionally, using individual CARs might potentially bias our sample towards larger industries with more public peers. Although Table 3 demonstrates the robustness of our results for relatively small industries, we further mitigate this concern by constructing portfolios based on peer-SPAC CARsin this section.

[Place Table 4 About Here]

Specifically, we sort all peer-SPAC CAR(-5,+5) into equally-weighted portfolio and regress 257 the average SPAC-level CARs on our main interested variables of $Ln(Length_{j,q})$ and $D(Early)_{j,q}$. We include the same set of SPAC-level control variables as in Table 2, as well as SPAC IPO year and industry by quarter fixed effects.

Table 4 presents the results across three event windows: CAR(-5,+5), CAR(-3,+3), and CAR(-1,+1). Consistent with Table 2, both $Ln(Length_{j,q})$ and $D(Early)_{j,q}$ are statistically significant at the 1% level for CAR(-5,+5) and CAR(-3,+3), despite a reduced sample size of 140 after incorporating all the fixed effects. However, the coefficient of $Ln(Length_{j,q})$ in column (5) is statistically insignificant (t-statistics: -1.66), possibly due to the reduced information content over a shorter window. Conversely, $D(Early)_{j,q}$ remains positive and significant at the 5% level in column (6). Overall, these deal-level regressions in Table 4 align with Table 2, indicating that a prolonged SPAC process convey information about industry overvaluations to the outside investors.

4.4 Heterogeneity Tests

Having established the negative stock reactions by peer investors following a prolonged SPAC process, we next explore the cross-sectional variation to understand the underlying mechanisms that may moderate this relation. Under the industry revaluation hypothesis, the revaluations of peers should be more pronounced when there is higher uncertainty regarding their fundamental values (Derrien et al., 2021). For example, we expect that peers with severe information asymmetry problems and worse information environment will react more negatively and strongly to a prolonged SPAC process within an industry. To test this hypothesis, we interact

$Ln(Length_{j,q})$ with measures that capture the information asymmetry between managers and outside investors (Myers and Majluf, 1984) and information environment.[13]

We employe four proxies to measure the information asymmetry problems between managers and outside investors: firm size, asset tangibility, analyst forecast dispersion, and forecast errors (Diether, Malloy, and Scherbina, 2002). We then construct four dummy variables, each set to one for peers exceeding the sample median in firm size, tangibility, forecast dispersion, and errors in a given year, respectively.[14] To measure information environments, we incorporate bid-ask spread, stock volatility, institutional ownership, and analyst coverage. Similarly, we construct four dummy variables equal to one for peers whose bid-ask spread, stock volatility, institutional ownership, and analyst coverage is above the sample median each year.

[Place Table 5 About Here]

To assess the role of information asymmetry and information environment for peers' revaluations upon business combination announcements, we interact $Ln(Length_{j,q})$ with these eight dummy variables in Table 5. First, the coefficients of $Ln(Length_{j,q})$ remain negative and significant at the 1% levels for all eight columns, implying that our results are not driven by a particular subsample. Second, columns (1) to (4) show that the interactions for large assets and high intangibility are positive and statistically significant, while the interactions for high analyst forecast dispersion and errors are negative and significant. These results are in line with our predictions that peers facing severe information asymmetry problems are revalued more strongly following a SPAC merger announcement within a given industry. Third, columns (5), (6), and (8) show that the revaluation effects become more pronounced for peers with high bid-ask spread, and

[13] We also interact $D(Early)_{j,q}$ with these information asymmetry measures in Appendix B and the results are consistent.

[14] For peers without analyst forecast dispersion and errors, following Derrien et al. (2021), we set these dummy variables as one.

volatility and weakens for peers with low analyst coverage, suggesting that the revaluation effects become stronger for peers with worse information environments. However, we do not find that institutional ownership affects the relation between $Ln(Length_{j,q})$ and peer stock reactions.[15]

Collectively, Table 5 reveals that the effects of industry revaluation effects are more pronounced among industry peers characterized by severe information asymmetry problems between insiders and outside investors, as well as among peers within weaker information environments.

4.5 Experienced SPAC Sponsors and Industry Revaluation

An underlying assumption behind the industry revaluation hypothesis is that SPAC sponsors possess superior information about industry fundamentals compared to outside investors. Consequently, the time length from SPAC IPOs to their subsequent merger announcement contains information regarding industry revaluations. Investors expect that, as the deadline approaches, SPAC managers tend to compromise on private targets' industry timing activities. If that is the case, we would expect that SPAC sponsors who have prior work experience in the industry or in M&As might provide more credible information to peer investors.

To assess this possibility, we manually collect the background information of SPAC sponsors from their IPO filing documents in the database of Electronic Data Gathering, Analysis, and Retrieval (Edgar). We focus on the following three aspects. First, whether the SPAC sponsors have a specified industry in which they intend to search for their target when filing IPOs. Second, whether the SPAC sponsors have any previous working experience in the industry they specify; and lastly, whether the SPAC sponsors have previous M&A experiences.

[15] Nevertheless, our analysis reveals a negative and significant interaction between $D(Early)_{j,q}$ and high institutional ownership in column (7) of Appendix B, which is consistent with the industry revaluation channel.

Table 6 reports the results. In columns (1) and (2), we examine the interaction term between time length and an indicator of whether a SPAC sponsor have a specified industry during the IPO process. The interaction term is negative and statistically significant, while the coefficient of the time length variable is no longer statistically significant. This indicates that revaluation effect is primarily driven by SPACs with a prespecified industry. Columns (3)-(4) and columns (5)-(6) examine the interaction terms between time lengths and experienced SPAC sponsors in the target industry or M&As, respectively. All interactions are negative and statistically significant, in line with the industry revaluation hypothesis that more experienced sponsors convey more credible information about industry misvaluations.

[Place Table 6 About Here]

4.6 Consistent Industries on SPACs' Form S-1

Prior literature suggests that sophisticated market participants may be attracted to industries with extreme performance (Kempf, Manconi, and Spalt, 2017). An alternative explanation is that low quality sponsors spend more time identifying targets but end up self-selecting into overvalued industries characterized by extreme favorable industry returns. Therefore, the negative coefficient of $Ln\left(Length_{j,q}\right)$ might reflect the self-selection for low-quality sponsors to self-select into overvalued industries.

To remedy this concern, we construct a dummy variable, D(Consistent Industry), equal to one if the private target operates within the same industry that SPAC sponsors specify during the SPAC IPO stage. The findings are reported in Table 7. In columns (1) and (2) of Table 7, we explore the interaction between $Ln\left(Length_{j,q}\right)$ and D(Consistent Industry) across the full sample. The final two columns of Table 7 match SPACs that have a consistent pre-specified industry with those that do not based on the closet propensity score. Across all specifications, we consistently

find a negative coefficient for the interaction term. These results contradict the self-selection explanation, which suggests that low-quality sponsors spend more time searching but are ultimately drawn to industries with extremely favorable returns, leading to a negative coefficient of $Ln(Length_{j,q})$.

[Place Table 7 About Here]

4.7 Pre-Announcement Industry Conditions and Industry Revaluation

Under the industry revaluation hypothesis, peers' revaluations should be more pronounced in industries that are more overvalued. Therefore, following the prior literature (e.g., Baker and Wurgler, 2002), we measure possible overvaluation by the *ex-ante* market or industry returns. Specifically, we construct three additional dummy variables equal to one if the 90-day pre-announcement industry returns, market returns, or market-adjusted industry returns are above the sample median in a given year. Therefore, the industry revaluation hypothesis predicts that our results should be stronger among industries characterized by high pre-announcement returns.

Table 8 reports the results. Columns (1)-(3) present the interactions for $Ln(Length_{j,q})$, whereas columns (4)-(6) present the interactions for $D(Early)_{j,q}$. Corroborating our hypothesis, we find that the interactions between $Ln(Length_{j,q})$ and pre-announcement return dummy variables are all negative and significant at the 1% levels. Accordingly, the interactions between $D(Early)_{j,q}$ and the pre-announcement return dummy variables are all positive and significant at the 1% levels. This evidence provides further support for the notion that peers' stock prices are adjusted downward to a greater extent when they experience better industry or market returns prior to the business combination announcements.

[Place Table 8 About Here]

4.8 Insider Trading Activities around Merger Announcements

A key assumption underlying the industry revaluation hypothesis is that managers are better at detecting industry-wide misvaluations (Harford, Stanfield, and Zhang, 2019; Derrien et al., 2021; Lee, 2021), thus their timing choices of business combinations convey important industry-wide information. To provide empirical support for this assumption, we analyze insider trading activities among peers during the SPAC merger announcement quarter. If peers are overvalued before merger announcements and managers can detect industry-wide overvaluations, one should expect more insider sales (purchases) following a longer (shorter) SPAC process.

Following the prior studies, we focus on open-market purchases and sales (transaction codes "P" or "S") reported on Forms 3, 4, and 5. We also eliminate data with recorded errors (cleanse codes "A" and "S") from the sample. Following the methodology of Kahle (2000) and Clark, Dunbar, and Kahle (2001), we calculate the average number of quarterly sales (purchases) made by insiders at each industry peer based on reported insider trading over quarters [-12, -1] relative to the SPAC merger announcement quarter. We use these averages as the expected number of trades and measure abnormal trading in the announcement quarter as the difference between the actual and expected number of sales (purchases).[16]

[Place Table 9 About Here]

Table 9 presents our results. Considering abnormal insider sales in columns (1), we find that $Ln(Length_{j,q})$ is positive and significant at the 1% level, consistent with our hypothesis that a longer SPAC process indicates a more overvalued industry condition. Conversely, in column (3), which analyzes abnormal insider purchases, we find that $Ln(Length_{j,q})$ is negative and significant at the 1% level, indicating that there are fewer insider purchases in peers when a SPAC experiences

[16] This section restricts to industry peers that have at least one insider trading activity in the quarter of [-12, -1] before de-SPAC announcement quarter. Nevertheless, we verify that our main results remain robust in this subsample.

a longer process before announcing its business combination in a given industry. Furthermore, we construct an alternative dependent variable, net abnormal sales (column 5), which represents the difference between abnormal sales and abnormal purchases. We find that $Ln(Length_{j,q})$ is negatively associated with net abnormal sales, which is consistent with the pattern in columns (1) and (3). However, when we replace $Ln(Length_{j,q})$ with $D(Early)_{j,q}$ in columns (2), (4), and (6), we only find weak evidence in column (4) that initiating a merger earlier is associated with more insider purchases.

Overall, these results offer empirical evidence supporting that industry peers tend to be overvalued in the presence of a prolonged SPAC process within a specific industry, and that corporate insiders are more capable of detecting misvaluations.

4.9 The SPAC Competitive Channel

Thus far, our findings align more closely with the industry revaluation hypothesis. However, it is crucial to acknowledge, as Spiegel and Tookes (2019) argue, that the channels of competition and industry revaluation may not be mutually exclusive but rather coexist. In this section, we explore the interplay between these two channels by examining how the relation between the length of the SPAC process and peer stock reactions varies across competitive versus concentrated industries.

Specifically, if the competitive channel plays a role, we expect that the negative relation between the length of the SPAC process and peer stock reactions will attenuate in more competitive industries. To test this hypothesis, we first calculate the Herfindahl-Hirschman index (HHI) as the sum of squared market shares of all firms in the same 3-digit SIC industry and define

D(Competitive) as a binary variable equal to one if a 3-digit SIC industry's HHI is below the sample median in a given year.[17]

[Place Table 10 About Here]

Table 10 presents the results. Column (1) reveals that the interaction term between the length of the SPAC process and the competitive industry indicator is positive and significant at the 1% level. In column (2), we find similar results the interaction between the early dummy and competitive industry indicator. These results indicate that although the industry revaluation channel seems to dominate in the full sample, the competitive channel also plays a role, especially within relatively competitive industries.

5 Conclusion

In this paper, we examine the relation between the time length of the SPAC process and industry peers' reactions. We posit that the misaligned interests between SPAC sponsors and shareholders lead sponsors to compromise on industry overvaluations to expedite deal finalization. As a result, the time length of SPACs contains valuable information about industry misvaluations. We coin this as industry revaluation hypothesis and find that a prolonged SPAC process is associated with more negative stock reactions among industry peers.

Further supporting the industry revaluation hypothesis, our findings are notably stronger among industry peers with more severe information asymmetry problems, poorer information environments, and larger price-ups prior to the announcement dates. Additionally, we observe that insider sales increase and insider purchases decrease in response to longer business combination

[17] In addition, we analyze the entire Compustat sample and define D(Competitive) as a variable indicating an industry with a Herfindahl-Hirschman Index (HHI) below the median of the Compustat sample. However, given that competitive industries typically contain a large number of industry peers, we find that 99.2% of our peer-SPAC observations fall within competitive industries. As a result, to more accurately identify relatively competitive industries, we opt to use our peer-SPAC sample rather than the broader Compustat sample.

announcements. Taken together, our findings suggest that SPACs' unique characteristics reveal industry-wide misvaluations to outside investors.

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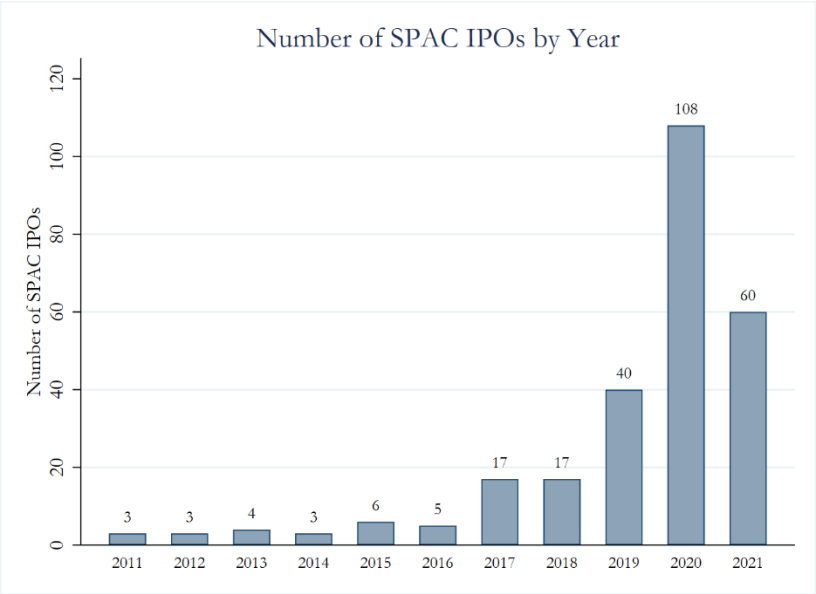
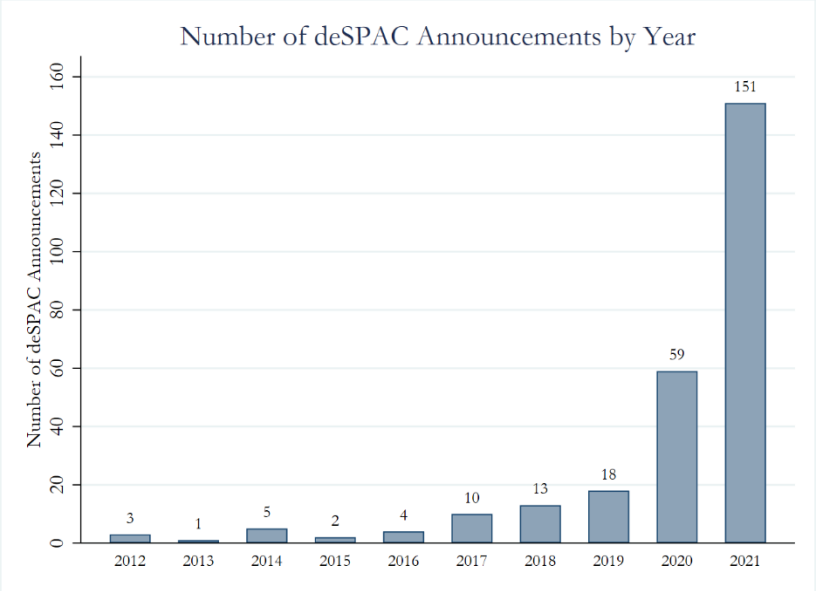
Figure 1
Distribution of SPAC IPOs and Business Combination Announcements
This figure presents the distribution of SPACs' IPOs and business combination announcements by year. The sample includes 257 non-financial and non-utility SPACs between 2011 and 2021.

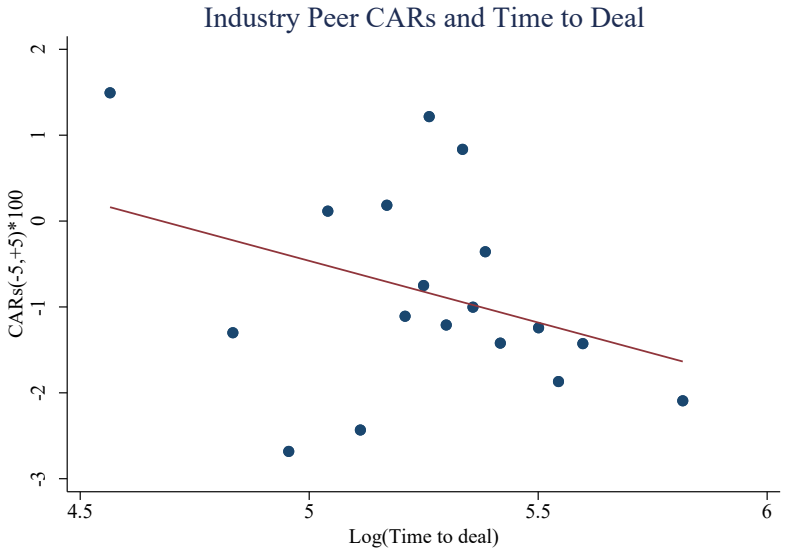


Panel A: Distribution of SPAC IPOs

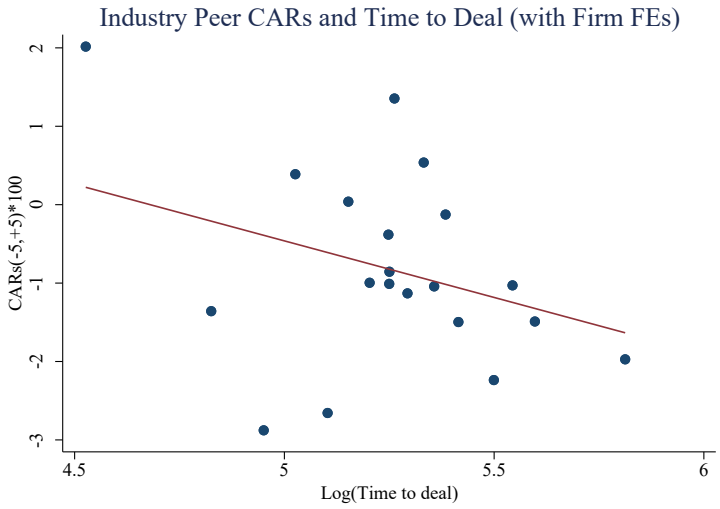


Panel B: Distribution of SPAC Announcements

Figure 2
Time to Deal and Industry Peer CARs
This figure presents the binned scatter plots. The Log time from SPAC completion to merger announcement is sorted into 20 bins. The dependent variable is the cumulative abnormal return for peer firms during a (-5, +5) window around the merger announcement date. Each panel also includes the line of best fit from an OLS regression. In Panel A, we control for the industry by time fixed effects and SPAC year fixed effects. In Panel B, we further control for the firm fixed effects.



Panel A: Industry Peer CARs and Time to Deal



Panel B: Industry Peer CARs and Time to Deal with Controls

Figure 3
Days to Deal Quartile and Average CARs
This figure presents the mean cumulative abnormal return (CARs) and 95% confidence interval for different time to deal quartile. Cumulative abnormal return for peer firms is measured during a (-5, +5) window around the merger announcement date.

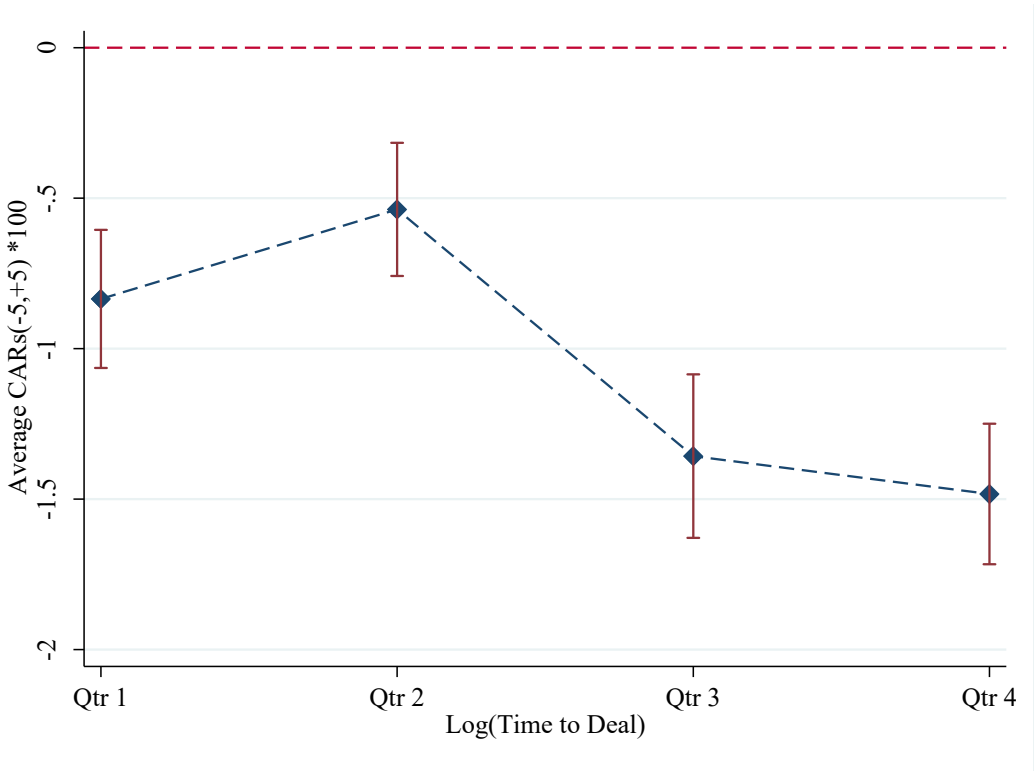


Table 1

Summary Statistics

This table presents summary statistics of the main variables. Panels A and B exhibit the SPAC-level and Peer-SPAC level characteristics, respectively. The SPAC sample contains 257 SPACs that go public and eventually make merger announcements between 2011 and 2021. Time Length indicates the number of days between SPAC IPO dates and business combination announcement dates. D(Early) is a dummy variable equal to one if a SPAC announces a merger within 180 days. Detailed descriptions of all other variables can be found in Appendix A. All variables are winsorized at the 1st and 99th percentiles.

Panel A: SPAC Level

Variable	N	Mean	S.D.	P25	Median	P75
Length	257	291.74	187.91	142.00	229.00	434.00
Early	257	0.40	0.49	0.00	0.00	1.00
SPAC Proceeds	257	280.89	198.17	175.00	250.00	305.00
Number of Bookrunners	257	1.65	0.78	1.00	1.00	2.00
Value of Deals	257	1632.65	1863.85	525.30	1131.30	2030.00
D(Pure Cash)	257	0.05	0.21	0.00	0.00	0.00
D(Pure Stock)	257	0.42	0.49	0.00	0.00	1.00
SPAC Return	257	0.04	0.10	0.00	0.01	0.04

Panel B: Peer-SPAC Level

Variable	N	Mean	S.D.	P25	Median	P75
CAR(-5,+5)×100	50,194	-0.71	13.27	-6.74	-0.84	4.84
CAR(-3,+3)×100	50,194	-0.50	10.18	-5.12	-0.53	3.77
CAR(-1,+1)×100	50,194	-0.23	6.29	-3.05	-0.24	2.36
Assets	50,194	4849.34	16000.00	138.00	643.64	2456.70
MB Ratio	50,194	4.01	3.64	1.67	2.75	4.79
Leverage	50,194	0.24	0.23	0.05	0.17	0.37
Cash Flow	50,194	-0.03	0.10	-0.05	0.00	0.02
Runups	50,194	0.03	0.40	-0.19	-0.04	0.14
Institutional Ownership (%)	50,194	49.03	38.67	2.63	58.08	86.76
Number of Analysts	50,194	4.30	3.62	1.57	3.50	6.08

Table 2
Baseline Results

This table presents the stock reactions of industry peers to SPAC merger announcements. The dependent variable, CAR(5,+5), represents the stock reactions surrounding SPAC merger announcements and is multiplied by 100 for ease of interpretation. Length indicates the number of days between SPAC IPO dates and business combination announcement dates. Early is a dummy variable equal to one if a SPAC announces a merger within 180 days. Detailed descriptions of all other variables can be found in Appendix A. SPAC IPO Year FE and Industry×Quarter FE account for fixed effects related to SPAC IPO year and industry by announcement quarter. Peer FE and Peer×Quarter represent peer fixed effects and peer by quarter fixed effects. All variables are winsorized at the 1st and 99th percentiles, and standard errors are clustered at the 3-digit SIC industry level. The t-statistics are reported in parentheses, with *, **, and *** indicating significance at the 10%, 5%, and 1% levels, respectively.

Dependent Variable	CAR(-5,+5) ×100					
	(1)	(2)	(3)	(4)	(5)	(6)
Ln(Length)	-1.330***	-1.905***	-2.304***			
	(-15.35)	(-5.85)	(-16.35)			
Early				1.220***	1.680***	1.855***
				(7.21)	(4.36)	(7.08)
Ln(Assets)		-4.182***			-4.178***	
		(-18.72)			(-18.62)	
MB Ratio		-1.096***			-1.096***	
		(-12.02)			(-11.99)	
Leverage		3.859***			3.856***	
		(9.54)			(9.54)	
Cash Flow		-4.096***			-4.097***	
		(-3.49)			(-3.48)	
Return Volatility		-23.510***			-23.651***	
		(-3.79)			(-3.80)	
Institutional Ownership		-4.764***			-4.760***	
		(-4.07)			(-4.09)	
Ln(Analyst)		1.589***			1.600***	
		(9.23)			(9.31)	
Runups		-1.326***	-9.571***		-1.286***	-9.437***
		(-3.65)	(-32.79)		(-3.55)	(-33.71)
Ln(SPAC Proceeds)		-1.059*	-1.289*		-1.140**	-1.403**
		(-1.90)	(-1.96)		(-2.27)	(-2.29)
Ln(# of Bookrunners)		2.696***	2.869***		2.619***	2.794***
		(6.65)	(8.41)		(6.73)	(8.84)
Ln(Value of Deals)		0.478***	0.459***		0.608***	0.603***
		(6.81)	(3.94)		(5.34)	(3.33)
D(Pure Cash)		-1.786***	-1.721***		-1.861***	-1.821***
		(-8.07)	(-5.85)		(-10.51)	(-4.85)
D(Pure Stock)		-1.889***	-2.041***		-1.962***	-2.113***
		(-8.65)	(-13.73)		(-8.60)	(-13.90)
SPAC Return		11.347***	11.682***		10.294***	10.407***
		(11.06)	(13.71)		(13.07)	(13.87)
SPAC IPO Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry × Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Peer FE	Yes	Yes	No	Yes	Yes	No
Peer × Quarter FE	No	No	Yes	No	No	Yes
Observations	51,973	49,463	42,455	51,973	49,463	42,455
Adj. R^2	0.073	0.096	0.237	0.073	0.095	0.236

Table 3
Robustness Checks

This table presents the stock reactions of industry peers to business combination announcements. Panels A and B exhibits results using different event windows and subsample analyses, respectively. The dependent variable, CARs, represent the stock reactions surrounding business combination announcements and are multiplied by 100 for ease of interpretation. Length indicates the number of days between SPAC IPO dates and business combination announcement dates. Early is a dummy variable equal to one if a SPAC announces a merger within 180 days. Detailed descriptions of all other variables can be found in Appendix A. In Panel B, we only retain business combination announcements that are eventually completed and within narrower industries, measured by the number of public peers less than 100. SPAC IPO Year FE and Industry×Quarter FE account for fixed effects related to SPAC IPO year and industry by announcement quarter. Peer FE and Peer×Quarter represent peer fixed effects and peer by quarter fixed effects. All variables are winsorized at the 1st and 99th percentiles, and standard errors are clustered at the 3-digit SIC industry level. The t-statistics are reported in parentheses, with *, **, and *** indicating significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Different Event Windows

Dependent Variable	CAR(-3,+3)×100				CAR(-1,+1)×100			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Ln(Length)	-1.405***	-1.664***			-0.390***	-0.495***		
	(-2.83)	(-4.67)			(-4.42)	(-5.01)		
Early			1.584***	1.698***			0.397***	0.440***
			(3.39)	(4.49)			(3.25)	(3.65)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SPAC IPO Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry × Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Peer FE	Yes	No	Yes	No	Yes	No	Yes	No
Peer × Quarter FE	No	Yes	No	Yes	No	Yes	No	Yes
Observations	49,463	42,455	49,463	42,455	49,463	42,455	49,463	42,455
Adj. R^2	0.069	0.158	0.069	0.158	0.042	0.068	0.041	0.068

Table 3 continues on the next page.

Table 3, continued.

Panel B: Subsample Analyses

Dependent Variable	CAR(-5,+5)×100			
	Completed M&A		Exclude Large Industries	
	(1)	(2)	(3)	(4)
Ln(Length)	-2.113***		-4.439**	
	(-4.65)		(-2.48)	
Early		1.723***		2.664***
		(2.81)		(3.08)
Controls	Yes	Yes	Yes	Yes
SPAC IPO Year FE	Yes	Yes	Yes	Yes
Industry × Quarter FE	Yes	Yes	Yes	Yes
Peer FE	Yes	Yes	Yes	Yes
Observations	39,424	39,424	3,131	3,131
Adj. R^2	0.106	0.105	0.058	0.057

Table 4
SPAC Deal-level Regressions

This table presents the stock reactions of industry peers to business combination announcements using deal-level regressions. The dependent variables, CARs, represents the equally weighted peers' stock reactions surrounding business combination announcements and are multiplied by 100 for ease of interpretation. Length indicates the number of days between SPAC IPO dates and business combination announcement dates. Early is a dummy variable equal to one if a SPAC announces a merger within 180 days. Detailed descriptions of all other variables can be found in Appendix A. All variables are winsorized at the 1st and 99th percentiles, and standard errors are clustered at the 3-digit SIC industry level. The t-statistics are reported in parentheses, with *, **, and *** indicating significance at the 10%, 5%, and 1% levels, respectively.

Dependent Variable	CAR(-5,+5)×100		CAR(-3,+3)×100		CAR(-1,+1)×100	
	(1)	(2)	(3)	(4)	(5)	(6)
Ln(Length)	-2.358***		-1.686***		-0.839	
	(-3.43)		(-3.28)		(-1.66)	
Early		2.196***		1.788***		1.136**
		(2.98)		(3.03)		(2.21)
Ln(SPAC Proceeds)	-0.391	-0.537	-0.806	-0.897	-0.479	-0.508
	(-0.45)	(-0.58)	(-1.61)	(-1.63)	(-0.87)	(-0.95)
Ln(# of Bookrunners)	2.201	2.050	0.488	0.376	-0.596	-0.658
	(1.44)	(1.36)	(0.57)	(0.47)	(-1.02)	(-1.18)
Ln(Value of Deals)	0.634	0.826*	0.220	0.365	0.329	0.409
	(1.66)	(1.90)	(0.65)	(1.03)	(0.89)	(1.05)
D(Pure Cash)	-2.020**	-2.147**	-1.812*	-1.911**	0.560	0.502
	(-2.22)	(-2.62)	(-2.06)	(-2.52)	(1.02)	(0.98)
D(Pure Stock)	-2.005*	-2.146**	-1.803***	-1.919***	-0.863*	-0.938**
	(-2.01)	(-2.23)	(-3.32)	(-3.59)	(-1.91)	(-2.16)
SPAC Return	7.647**	7.698**	4.095	4.195*	1.238	1.358
	(2.19)	(2.73)	(1.57)	(1.98)	(0.92)	(1.24)
SPAC IPO Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry × Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	140	140	140	140	140	140
Adj. R^2	0.237	0.234	0.141	0.147	0.165	0.179

Table 5

Revaluations of SPAC Business Combination Announcements and Peers' Information Asymmetry

This table presents the stock reactions of industry peers to SPAC business combination announcements over the interactions between time length and peer-level characteristics. The dependent variable, CAR(5,+5), represents the stock reactions surrounding business combination announcements and is multiplied by 100 for ease of interpretation. Length indicates the number of days between SPAC IPO dates and business combination announcement dates. Large Assets, High Tangibility, Large Dispersion, Large Errors, Large B-A Spread, High Volatility, High IOR, and High Analysts are dummy variables equal to one if a peer's total assets, tangibility, analyst forecast dispersion, analyst forecast errors, bid-ask spread, volatility, institutional ownership, and analyst coverage is above the median in a given year. The same set of control variables are included but not reported. Detailed descriptions of all other variables can be found in Appendix A. SPAC IPO Year FE and Industry × Quarter FE account for fixed effects related to SPAC IPO year and industry by announcement quarter. Peer FE and Peer × Quarter represent peer fixed effects and peer by quarter fixed effects. All variables are winsorized at the 1st and 99th percentiles, and standard errors are clustered at the 3-digit SIC industry level. The t-statistics are reported in parentheses, with *, **, and *** indicating significance at the 10%, 5%, and 1% levels, respectively.

Dependent Variable	CAR(-5,+5)×100							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Ln(Length)	-2.242***	-2.167***	-1.714***	-1.765***	-1.701***	-1.728***	-2.085***	-2.108***
	(-6.90)	(-8.36)	(-5.84)	(-6.88)	(-5.78)	(-6.17)	(-4.60)	(-6.32)
Ln(Length)×Large Assets	0.550***							
	(3.36)							
Large Assets	-2.051**							
	(-2.22)							
Ln(Length)×High Tangibility		0.518***						
		(3.62)						
High Tangibility		-3.252***						
		(-4.00)						
Ln(Length)×Large Dispersion			-0.366***					
			(-3.15)					
Large Dispersion			1.261**					
			(2.04)					
Ln(Length)×Large Errors				-0.288*				
				(-1.79)				
Large Errors				1.230				
				(1.42)				

Table 5 continues on the next page.

Table 5, continued.

Ln(Length)×Large B-A Spread					-0.518***			
					(-3.83)			
Large B-A Spread					4.245***			
					(5.24)			
Ln(Length)×High Volatility						-0.436**		
						(-2.34)		
High Volatility						1.363		
						(1.43)		
Ln(Length)×High IOR							0.318	
							(1.18)	
High IOR							0.364	
							(0.30)	
Ln(Length)×High Analysts								0.338***
								(3.72)
High Analysts								-2.208***
								(-4.12)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SPAC IPO Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry × Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Peer FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	48,580	48,449	48,580	48,580	48,580	48,578	48,580	48,580
Adj. R^2	0.098	0.098	0.098	0.097	0.098	0.098	0.098	0.097

Table 6
Experienced Sponsors

This table presents the stock reactions of industry peers to business combination announcements over the interactions between the time length of the SPAC process and experience dummy. The dependent variable, CAR(5,+5), represents the stock reactions surrounding business combination announcements and is multiplied by 100 for ease of interpretation. Length indicates the number of days between SPAC IPO dates and business combination announcement dates. Specified Industry is a dummy that equals one if the SPAC firm explicitly states that they have a targeted industry in the IPO prospectus. Industry Experience is an indicator whether the executive team of the SPAC have previous working experience in the industry that they initially targeted. Industry Experience is an indicator whether the executive team of the SPAC have previous M&A experience. Detailed descriptions of all other variables can be found in Appendix A. SPAC IPO Year FE and Industry × Quarter FE account for fixed effects related to SPAC IPO year and industry by announcement quarter. Peer FE and Peer × Quarter represent peer fixed effects and peer by quarter fixed effects. All variables are winsorized at the 1st and 99th percentiles, and standard errors are clustered at the 3-digit SIC industry level. The t-statistics are reported in parentheses, with *, **, and *** indicating significance at the 10%, 5%, and 1% levels, respectively.

Dependent Variable	CAR(-5,+5)*100					
	(1)	(2)	(3)	(4)	(5)	(6)
Ln(Length)	0.114	-0.498	2.115***	1.446*	0.582	0.625
	(0.20)	(-0.46)	(3.21)	(1.95)	(1.41)	(0.44)
Specified Industry	6.648***	4.524***				
	(6.72)	(9.43)				
Ln(Length)×Specified Industry	-0.727***	-0.410**				
	(-4.58)	(-2.91)				
Industry Experience			14.667*	11.777**		
			(1.96)	(2.82)		
Ln(Length)×Industry Experience			-2.776**	-2.149***		
			(-2.33)	(-3.37)		
M&A Experience					11.025***	14.655***
					(3.77)	(5.48)
Ln(Length)×M&A Experience					-1.578*	-2.321***
					(-2.06)	(-7.23)
Controls	No	Yes	No	Yes	No	Yes
SPAC IPO Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry × Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Peer × Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	59,295	54,901	52,600	48,447	59,295	54,901
Adj. R^2	0.155	0.175	0.165	0.191	0.156	0.177

Table 7
Consistent Industry Acquisitions

This table presents the stock reactions of industry peers to business combination announcements over the interactions between the time length of the SPAC process and consistent target industry dummy. The dependent variable, CAR(5,+5), represents the stock reactions surrounding business combination announcements and is multiplied by 100 for ease of interpretation. Length indicates the number of days between SPAC IPO dates and business combination announcement dates. Consistent Industry is a dummy that equals one if the actual SPAC acquires a target company that operates in the same industry as they stated in the prospectus. Columns (1) and (2) report the results of the whole sample while columns (3) and (4) report results estimated with the propensity score matched sample. Detailed descriptions of all other variables can be found in Appendix A. SPAC IPO Year FE and Industry × Quarter FE account for fixed effects related to SPAC IPO year and industry by announcement quarter. Peer FE and Peer × Quarter represent peer fixed effects and peer by quarter fixed effects. All variables are winsorized at the 1st and 99th percentiles, and standard errors are clustered at the 3-digit SIC industry level. The t-statistics are reported in parentheses, with *, **, and *** indicating significance at the 10%, 5%, and 1% levels, respectively.

Dependent Variable	CAR(-5,+5)×100			
	Whole Sample		Matched Sample	
	(1)	(2)	(3)	(4)
Ln(Length)	1.253	1.483	-6.289***	-8.914***
	(0.90)	(0.77)	(-49.61)	(-13.81)
Consistent Industry	6.502	8.797**	27.392***	15.754***
	(1.71)	(2.32)	(6.84)	(5.07)
Ln(Length)×Consistent Industry	-1.635*	-2.021**	-4.334***	-2.119**
	(-1.88)	(-2.22)	(-5.31)	(-3.28)
Controls	No	Yes	No	Yes
SPAC IPO Year FE	Yes	Yes	Yes	Yes
Industry × Quarter FE	Yes	Yes	Yes	Yes
Peer × Quarter FE	Yes	Yes	Yes	Yes
Observations	49,317	45,389	14,853	12,836
Adj. R^2	0.171	0.200	0.129	0.159

Table 8
Pre-Announcement Price Runups

This table presents the stock reactions of industry peers to business combination announcements over the interactions between the time length of the SPAC process and peers' pre-announcement industry and market returns. The dependent variable, CAR(5,+5), represents the stock reactions surrounding business combination announcements and is multiplied by 100 for ease of interpretation. Length indicates the number of days between SPAC IPO dates and business combination announcement dates. Early is a dummy variable equal to one if a SPAC announces a merger within 180 days. Industry Return, Market Return, and Mkt-Adj Industry Return are dummy variables equal to one if a peer's 90-day pre-announcement industry return, CRSP market return, or market-adjusted industry return is above the sample median in a given year. The same set of control variables are included but not reported. Detailed descriptions of all other variables can be found in Appendix A. SPAC IPO Year FE and Industry × Quarter FE account for fixed effects related to SPAC IPO year and industry by announcement quarter. Peer FE and Peer × Quarter represent peer fixed effects and peer by quarter fixed effects. All variables are winsorized at the 1st and 99th percentiles, and standard errors are clustered at the 3-digit SIC industry level. The t-statistics are reported in parentheses, with *, **, and *** indicating significance at the 10%, 5%, and 1% levels, respectively.

Dependent Variable	CAR(-5,+5)×100					
	(1)	(2)	(3)	(4)	(5)	(6)
Ln(Length)	-0.865***	-1.552***	-1.037***			
	(-8.00)	(-3.82)	(-5.69)			
Early				-0.574	0.207	0.283
				(-0.78)	(0.56)	(0.74)
Industry Return	14.214***			-1.864***		
	(4.48)			(-4.49)		
Market Return		9.645***			-1.852***	
		(15.74)			(-3.36)	
Mkt-Adj Industry Return			9.453***			-0.803***
			(4.21)			(-8.61)
Ln(Length)×Industry Return	-2.696***					
	(-4.63)					
Ln(Length)×Market Return		-1.859***				
		(-8.25)				
Ln(Length)×Mkt-Adj Industry Return			-1.767***			
			(-4.71)			
Early×Industry Return				3.366***		
				(3.20)		
Early×Market Return					2.650***	
					(9.11)	
Early×Mkt-Adj Industry Return						2.183***
						(3.28)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
SPAC IPO Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry × Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Peer FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	48,580	48,580	48,580	48,580	48,580	48,580
Adj. R^2	0.100	0.098	0.098	0.099	0.099	0.098

Table 9
Insider Trading Activities

This table shows the relation between the abnormal insider sales and purchases during business combination announcement quarter and the time length of the SPAC process. Insider trading transactions include all open-market transactions as reported on Forms 3, 4, and 5, and are constructed using transactions made by top insiders including CEOs, CFOs, etc. We remove recorded errors with cleanse codes equal to 'A' and 'S'. Abnormal sales (purchases) are defined based on the differences between actual sales (purchases) and expected sales (purchases) in each quarter. Expected sales (purchases) are measured with the average quarterly purchases (sales) for quarters *t*=-12 to *t*=-1 before the announcing quarter (t=0). Quarterly purchases and sales are set to zero if a firm does not have any insider trading activity in a quarter. Length indicates the number of days between SPAC IPO dates and business combination announcement dates. D(Early) is a dummy variable equal to one if a SPAC announces a merger within 180 days. Detailed descriptions of all other variables can be found in Appendix A. SPAC IPO Year FE and Industry × Quarter FE account for fixed effects related to SPAC IPO year and industry by announcement quarter. All variables are winsorized at the 1st and 99th percentiles, and standard errors are clustered at the 3-digit SIC industry level. The t-statistics are reported in parentheses, with *, **, and *** indicating significance at the 10%, 5%, and 1% levels, respectively.

Dependent Variable	Abnormal Sales		Abnormal Purchases		Net Abnormal Sales	
	(1)	(2)	(3)	(4)	(5)	(6)
Ln(Length)	0.036***		-0.001***		0.038***	
	(5.52)		(-3.13)		(5.95)	
Early		0.010		0.001***		0.009
		(1.02)		(3.27)		(0.96)
Ln(Assets)	0.786***	0.786***	0.025***	0.025***	0.760***	0.760***
	(17.76)	(17.75)	(6.36)	(6.36)	(17.61)	(17.61)
MB Ratio	1.500***	1.500***	0.002	0.002	1.498***	1.498***
	(10.04)	(10.04)	(1.34)	(1.34)	(10.12)	(10.12)
Leverage	-3.420***	-3.420***	-0.076	-0.076	-3.332***	-3.332***
	(-11.42)	(-11.42)	(-1.09)	(-1.09)	(-12.10)	(-12.09)
Cash Flow	7.280***	7.281***	-0.117	-0.117	7.403***	7.403***
	(7.95)	(7.95)	(-1.43)	(-1.43)	(7.93)	(7.93)
Institutional Ownership	0.223***	0.222***	0.062***	0.062***	0.160**	0.160**
	(3.12)	(3.12)	(3.06)	(3.06)	(2.21)	(2.21)
Ln(Analyst)	0.163*	0.163*	-0.014*	-0.014*	0.178*	0.177*
	(1.67)	(1.67)	(-1.90)	(-1.90)	(1.79)	(1.79)
Runups	0.491	0.489	-0.038**	-0.038**	0.530	0.529
	(0.75)	(0.75)	(-2.40)	(-2.39)	(0.80)	(0.80)
Ln(SPAC Proceeds)	0.017	0.024	-0.000	-0.000*	0.018	0.024
	(1.22)	(1.57)	(-1.39)	(-1.72)	(1.27)	(1.64)
Ln(# of Bookrunners)	0.018***	0.014***	0.001**	0.001***	0.017***	0.013**
	(4.57)	(2.69)	(2.62)	(2.90)	(4.67)	(2.63)
Ln(Value of Deals)	0.005	0.006	-0.000	-0.000	0.006	0.006
	(1.28)	(1.24)	(-0.34)	(-0.12)	(1.23)	(1.18)
D(Pure Cash)	-0.088*	-0.086	0.000	0.000	-0.088	-0.086
	(-1.69)	(-1.50)	(0.09)	(0.03)	(-1.66)	(-1.47)
D(Pure Stock)	0.018**	0.015***	-0.001***	-0.001***	0.018***	0.016***
	(2.61)	(2.78)	(-3.13)	(-3.17)	(2.70)	(2.89)
SPAC Return	0.026	0.043*	0.002	0.001	0.025	0.042*
	(1.05)	(1.95)	(1.03)	(0.58)	(0.94)	(1.80)
SPAC IPO Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry × Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Peer FE	No	No	No	No	No	No
Observations	31,883	31,883	31,883	31,883	31,883	31,883
Adj. R^2	0.138	0.138	0.018	0.018	0.138	0.138

Table 10
The Competitive Channel

This table presents the stock reactions of industry peers to business combination announcements over the interactions between the time length and an indicator variable for high industry competition. The dependent variable, CAR(5,+5), represents the stock reactions surrounding business combination announcements and is multiplied by 100 for ease of interpretation. Length indicates the number of days between SPAC IPO dates and business combination announcement dates. Early is a dummy variable equal to one if a SPAC announces a merger within 180 days. Competitive is a dummy variable equal to one if an industry's Herfindahl-Hirschman index (HHI), calculated as the sum of squared market shares of all firms in the same 3-digit SIC industry, is below the sample median in a given year. The same set of control variables are included but not reported. Detailed descriptions of all other variables can be found in Appendix A. SPAC IPO Year FE and Industry × Quarter FE account for fixed effects related to SPAC IPO year and industry by announcement quarter. Peer FE and Peer × Quarter represent peer fixed effects and peer by quarter fixed effects. All variables are winsorized at the 1st and 99th percentiles, and standard errors are clustered at the 3-digit SIC industry level. The t-statistics are reported in parentheses, with *, **, and *** indicating significance at the 10%, 5%, and 1% levels, respectively.

Dependent Variable	CAR(-5,+5)×100	
	(1)	(2)
Ln(Length)	-4.305***	
	(-3.96)	
Early		3.517***
		(2.73)
Competitive	-15.997***	-0.540***
	(-3.49)	(-13.39)
Ln(Length)×Competitive	2.504***	
	(3.38)	
Early×Competitive		-2.109**
		(-2.28)
Controls	Yes	Yes
SPAC IPO Year FE	Yes	Yes
Industry × Quarter FE	Yes	Yes
Peer FE	Yes	Yes
Observations	49,489	49,489
Adj. R^2	0.106	0.105

Appendix A
Variable Definitions

This table shows variable descriptions and data sources.

Variables	Descriptions
A. SPACs' Level Characteristics	
Length	The time length between SPACs' initial public offering dates and business combination announcement dates, *in days*. *Source:* Refinitiv SDC.
Early	A dummy variable equal to one if the time length between SPACs' IPO dates and business combination announcement dates are below 180 days. *Source:* Refinitiv SDC.
Ln(SPAC Proceeds)	The logarithmic value of SPACs' total proceeds raised at the time of IPOs, *in millions*. *Source:* Refinitiv SDC.
Ln(Number of Bookrunners)	The logarithmic value of the number of bookrunners for SPACs' IPOs. *Source:* Refinitiv SDC.
Ln(Value of Deals)	The logarithmic value of the effective value of the announced merger deal. *Source:* Refinitiv SDC.
D(Pure Cash)	A dummy variable equal to one if the merger will be completely by cash. *Source:* Refinitiv SDC.
D(Pure Stock)	A dummy variable equal to one if the merger will be completely paid by stocks. *Source:* Refinitiv SDC.
SPAC Return	SPACs' return 3-month prior to the business combination announcement dates. *Source:* CRSP.
B. Peer-SPAC Level Characteristics	
CAR(-5,+5) (%)	Cumulative abnormal returns (CARs) of industry peers around the 11-day window, (-5,+5) of business combination announcement dates. Abnormal returns are obtained by the difference between realized returns and expected returns, which are estimated with a four-factor model including a market factor, SMB, HML, and UMD. Our estimation periods begin 365 days and stop 30 days before the announcement dates. We require that there are at least 30 daily returns for the estimation period. *Source*: CRSP and Fama-French data library.
Ln(Assets)	The logarithmic value of total assets, measured at the most recent fiscal quarter end before the announcement dates. *Source*: Compustat.
MB Ratio	Market-to-book ratio measured at the most recent fiscal quarter before the announcement dates. It is calculated as total assets minus total equity plus market capitalization, scaled by total assets. *Source*: Compustat.
Leverage	Book value of leverage measured at the most recent fiscal quarter before the announcement dates. It is calculated as the sum of current liabilities and long-term debt, scaled by total assets. *Source*: Compustat.
Cash Flow	Net income plus depreciation and amortization in a quarter, measured at the most recent fiscal quarter before the announcement dates. *Source*: Compustat.
Runups	Industry peers' price runups. It is measured as the 3-month market-adjusted returns before the announcement dates. *Source*: CRSP.
Institutional Ownership	Institutional ownership ratio in the most recent quarter. For missing values of institutional ownership, we set it to zero. *Source*: Thomson Reuters' CDA/Spectrum Institutional (13f) Holdings database.
Ln(Analysts)	The logarithmic value of the number of analysts, measured at the most recent fiscal quarter before peer IPO filing dates. *Source*: Thomson Reuter I/B/E/S.

C. Heterogeneity Test Variables	
Large Assets	A dummy variable equal to one if a peer's most recent total asset is above the yearly median. *Source:* Compustat.
High Tangibility	A dummy variable equal to one if a peer's most recent tangibility (measured by tangible assets over total assets) is above the yearly median. *Source:* Compustat.
Large Dispersion	A dummy variable equal to one if a peer's analyst forecast dispersion (measured by the standard deviation of analyst forecast earnings-per-share (EPS) over share price) is above the yearly median or is missing. *Source*: Thomson Reuter I/B/E/S.
Large Errors	A dummy variable equal to one if a peer's analyst forecast errors (measured by the absolute value of the difference between EPS consensus and actual earnings over share price) is above the yearly median or is missing. *Source*: Thomson Reuter I/B/E/S.
Large B-A Spread	A dummy variable equal to one if a peer's quarterly average bid-ask spread is above the yearly median. *Source:* CRSP.
High Volatility	A dummy variable equal to one if a peer's quarterly stock volatility is above the yearly median. *Source:* CRSP.
High IOR	A dummy variable equal to one if a peer's most recent institutional ownership is above the yearly median. *Source:* Thomson Reuters' CDA/Spectrum Institutional (13f) Holdings database.
High Analysts	A dummy variable equal to one if a peer's most recent analyst coverage (measured by the number of analysts following a firm) is above the yearly median. *Source:* Thomson Reuter I/B/E/S.
Industry Return	A dummy variable equal to one if a peer's 3-month value-weighted industry return (based on 3-digit SIC code) prior to business combination announcements is above the yearly median. *Source:* CRSP.
Market Return	A dummy variable equal to one if a peer's 3-month CRSP value-weighted market return prior to business combination announcements is above the yearly median. *Source:* CRSP.
Market-Adj Return	A dummy variable equal to one if a peer's 3-month market-adjusted industry return prior to the announcements is above the yearly median. *Source:* CRSP.
Abnormal Sales/Purchases	Insiders' abnormal stock sales/purchases. Insider trading transactions include all open-market transactions as reported on Forms 3, 4, and 5, and are constructed using transactions made by top insiders including CEOs, CFOs, etc. We remove recorded errors with cleanse codes equal to 'A' and 'S'. Abnormal sales (purchases) are defined based on the differences between actual sales (purchases) and expected sales (purchases) in each quarter. Expected sales (purchases) are measured with the average quarterly purchases (sales) for quarters t=-12 to t=-1 before the announcement quarter (t=0). Quarterly sales and purchases are set to zero if a firm does not have any insider trading activity in a quarter. *Source:* Thomson Reuter I/B/E/S.
Net Abnormal Sales	Abnormal Sales minus abnormal purchases in a quarter. *Source:* Thomson Reuter I/B/E/S.
Competitive	A dummy variable equal to one if a peer's Herfindahl-Hirschman index (HHI) based on sales in the same 3-digit SIC industry is above the yearly median. *Source:* Compustat.

Appendix B
Revaluations of SPAC Business Combination Announcements and Peer Information Asymmetry

This table presents the stock reactions of industry peers to business combination announcements over the interactions between the time length of SPAC process and peer-level characteristics. The dependent variable, CAR(5,+5), represents the stock reactions surrounding business combination announcements and is multiplied by 100 for ease of interpretation. Early is a dummy variable equal to one if a SPAC announces a merger within 180 days. Large Assets, High Tangibility, Large Dispersion, Large Errors, Large B-A Spread, High Volatility, High IOR, and High Analysts are dummy variables equal to one if a peer's total assets, tangibility, analyst forecast dispersion, analyst forecast errors, bid-ask spread, volatility, institutional ownership, and analyst coverage is above the median in a given year. The same set of control variables are included but not reported. Detailed descriptions of all other variables can be found in Appendix A. SPAC IPO Year FE and Industry × Quarter FE account for fixed effects related to SPAC IPO year and industry by announcement quarter. Peer FE and Peer × Quarter represent peer fixed effects and peer by quarter fixed effects. All variables are winsorized at the 1st and 99th percentiles, and standard errors are clustered at the 3-digit SIC industry level. The t-statistics are reported in parentheses, with *, **, and *** indicating significance at the 10%, 5%, and 1% levels, respectively.

Dependent Variable	CAR(-5,+5)×100							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Early	2.134***	2.006***	1.370***	1.459***	1.282***	1.370***	2.133***	2.126***
	(4.60)	(5.14)	(5.59)	(6.78)	(4.22)	(6.12)	(3.84)	(4.46)
Early×Large Assets	-0.784***							
	(-3.80)							
Large Assets	1.283***							
	(7.37)							
Early×High Tangibility		-0.645***						
		(-8.11)						
High Tangibility		-0.155						
		(-1.59)						
Early×Large Dispersion			0.536*					
			(1.72)					
Large Dispersion			-0.963**					
			(-2.09)					
Early×Large Error				0.403				
				(1.10)				
Large Error				-0.508**				
				(-2.25)				

Appendix B continues on the next page.

Appendix B, continued.

Early×Large B-A Spread					0.920***			
					(3.31)			
Large B-A Spread					1.024***			
					(6.52)			
Early×High Volatility						0.681		
						(1.66)		
High Volatility						-1.300***		
						(-2.79)		
Early×High IOR							-0.853**	
							(-2.41)	
High IOR							2.419***	
							(4.66)	
Early×High Analysts								-0.800***
								(-3.88)
High Analysts								-0.045
								(-0.21)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SPAC IPO Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry × Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Peer FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	48,580	48,449	48,580	48,580	48,580	48,578	48,580	48,580
Adj. R^2	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097

Appendix C Theoretical Model

In this section, we use a simple theoretical model to illustrate how the time of the SPAC process can cause the public investors to revalue the industry peers of the target companies. Consider a SPAC with two potential outcomes, each of which can generate value V_H and V_L respectively with $V_H > V_L$. The SPAC's probability of success, $P(t, \tilde{v})$, is determined by two elements: the time t that the SPAC sponsor allocates to searching for potential industry targets, and the average fundamental value $\tilde{v}$ of firms in the industry. While the SPAC sponsors can observe the true value of $\tilde{v}$, outside investors can only observe the market price of the public firms $v = \tilde{v} + \epsilon$.

The probability of a successful merger, $P(t, \tilde{v})$ is increasing with the time that the SPAC sponsor spends on searching for potential targets t with $\frac{\partial P}{\partial t} > 0$, and $\frac{\partial^2 P}{\partial t^2} < 0$. $P(t, \tilde{v})$ is also increasing with the fundamental value $\tilde{v}$ with $\frac{\partial P}{\partial \tilde{v}} > 0$. However, the marginal increase of P with time t is decreasing with $\tilde{v}$, so $\frac{\partial^2 P}{\partial t \partial \tilde{v}} < 0$. The SPAC sponsor is faced with the following value maximization problem.

$$\max_t V = \begin{cases} P(t, \tilde{v})V_H + (1 - P(t, \tilde{v})V_L - c(t), & t < T \\ -c(T), & t \geq T \end{cases}$$

where $c(t)$ is a convex function of the search cost with $\frac{\partial C}{\partial t} > 0$ and $\frac{\partial^2 C}{\partial t^2} > 0$. T is the deadline before which the SPAC company has to complete the merger. The first order condition of equation (1) implies that,

$$P'(t^*, \tilde{v})(V_H - V_L) = c'(t^*),$$

where, t^* is the optimal time for the SPAC sponsor to execute the acquisition. Then taking the first order derivative of t^* with respect to $\tilde{v}$, we get:

$$(V_H - V_L) * \left[\frac{\partial^2 P}{\partial t^2}\frac{\partial t}{\partial \tilde{v}} + \frac{\partial^2 P}{\partial t \partial \tilde{v}}\right] = \frac{\partial^2 C}{\partial t^2}\frac{\partial t}{\partial v}.$$

Rearrange the equation, we have

$$(V_H - V_L) * \frac{\partial^2 P}{\partial t \partial \tilde{v}} = \left[\frac{\partial^2 C}{\partial t^2} - (V_H - V_L)\frac{\partial^2 P}{\partial t^2}\right]\frac{\partial t^*}{\partial \tilde{v}}.$$

With $\frac{\partial^2 P}{\partial t^2} < 0$ and $\frac{\partial^2 C}{\partial t^2} > 0$. $\frac{\partial t}{\partial \tilde{v}}$ is negative when $\frac{\partial^2 P}{\partial t \partial \tilde{v}}$ is negative. In other words, the optimal business combination time for the sponsors is negatively correlated with the fundamental value of the target industry if the marginal increase in probability of success is decreasing with $\tilde{v}$.

Outside investors cannot observe the probability of a successful merger or the true value of $\tilde{v}$. Nevertheless, they can infer $\tilde{v}$ by observing the time length of the SPAC process. Therefore, if outside investors observe a longer SPAC process, they will update their valuation of targets' industry peers downward.