# SPACS' DIRECTORS NETWORK: CONFLICTS OF INTEREST, COMPENSATION, AND COMPETITION*

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**Abstract**

In 2010-2021, 972 SPACs raised $271 billion and hired 4,056 directors to facilitate mergers with private firms. We show theoretically and empirically that entrant SPACs inefficiently front-run the deal flow by hiring incumbent SPACs' directors. Incumbent SPAC's lower compensation and longer time to liquidation decrease directors' compensation from the entrant SPAC but increase the chance for the conflict of interest to emerge. Empirically, higher pay by the entrant SPAC increases the chance that a director misallocates the target, hurting the returns of the incumbent SPAC's investors.

*JEL Codes:* G23, G34, G38, L14

*Keywords:* Corporate governance, directors, unicorn hunters, SPACs, conflict of interest, interlocked boards, IPOs, M&A, allocational efficiency, financial regulation

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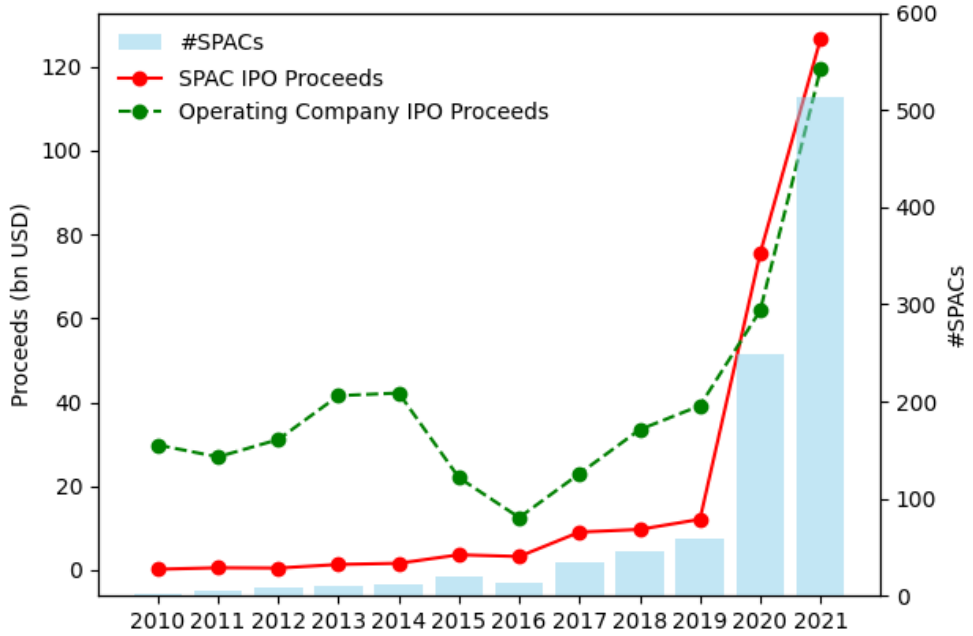
# 1 Introduction

Special Purpose Acquisition Company (SPAC) IPO volumes have surged in recent years (see Figure 1). In 2020-2021, SPAC IPO volume reached more than $200 billion. Merging with a SPAC has become an important mechanism for private companies to go public. Since 2010, 417 SPACs merged or announced a merger with private firms. These mergers created public firms with an aggregate pre-money valuation of $743 billion. At the end of 2021, 534 SPACs were still searching for a target. Even if no new SPACs raise money from investors, the M&A activity from the existing SPACs has the potential to generate mergers in excess of one trillion USD.

**Figure 1: SPACs' IPOs vs. traditional firms' IPOs in 2010-2021**

This figure reports the number of SPACs, and IPO proceeds of SPACs operating companies from January 2010 to December 2021. Proceeds exclude overallotment options and is in billion of USD.




SPAC's directors play a critical role in SPAC's success. The main role of SPAC's directors is to find a target company within a two-year period from the IPO date.[1] SPAC's directors

[1]About 50% of SPACs' target companies are unicorns (private companies with above $1B valuation),

hold SPAC's shares and benefit significantly from a successful merger. If a SPAC fails to merge within the two-year period, then it liquidates, the money is returned to the investors, and the value of the directors' shares goes to zero. Even though directors have incentives to find the best target company for a given SPAC, a conflict of interest can emerge when directors sit on the board of more than one SPAC. Conflicted directors might inefficiently allocate a prospective target to the younger SPAC even though this SPAC has more time to find another target than the older SPAC.

Does this conflict of interest exist? Do investors suffer from it? Do SPAC's sponsors generate the conflict on purpose? To address these questions, we build a novel model of competition between SPACs, solve for the optimal compensation, and provide conditions when it creates a conflict of interest that leads to inefficient mergers and hurts investors. To test our theory, we collect the most comprehensive data about SPACs currently available. We test the model at three levels. First, we test the predictions about the optimal compensation provided by SPACs. Then we test the optimal decisions of directors in the allocation of SPACs. Lastly, we test the decisions of SPAC investors and the effect of the directors' decisions on investors' returns. Overall, our empirical results provide strong evidence for inefficient mergers that hurt unsophisticated investors.

We start with a theoretical framework that studies the optimal strategy of an entrant SPAC when it hires a new director who is currently serving on the board of another SPAC. The entrant takes the director's compensation from the incumbent SPAC as given and decides on whether they want to create a conflict of interest. To create the conflict of interest, it needs not only to compensate the director more than her current compensation from the incumbent but also to pay a premium to compensate the director for the liquidation risk of the incumbent. This risk exists because of the limited time SPACs have to find a target. If a director misallocates a target to a younger SPAC, she takes the risk that the older SPAC will not be able to merge with a high quality target before it needs to liquidate. In this case, the

which makes SPAC directors more similar to unicorn hunters than directors of a traditional company.

older SPAC will inefficiently merge with a low quality target, leading to lower returns both for the director and for the older SPAC's investors. We identify two regions in the parameter space such that in the first region, the entrant decides to compete with the incumbent. In this region, the optimal compensation by the entrant is increasing in the liquidation risk of the incumbent. In the second region, it is costly for the entrant SPAC to compete. The compensation in this region does not depend on the liquidation risk of the incumbent. This asymmetry concerning the liquidation risk allows us to derive unique empirical predictions that we test in the data.

One of the paper's contributions is to collect and merge data that provides a comprehensive view of SPACs' director networks, SPACs' characteristics and returns, and directors' characteristics and compensation. We obtain the SPAC management teams' identities by web-scraping the 424-B4 and 424-B3 filings from EDGAR. To study SPACs' board composition and director credentials, we then hand-collect the SPAC directors' biographical information from Capital IQ and hand-match it with the SPAC sample. Our final sample contains information on 972 SPACs with 5,072 individual directors and officers from 2010 to 2021. To the best of our knowledge, this is one of the most comprehensive datasets on SPACs in general and on SPACs' board members.

Using these data, we construct a novel dynamic network of SPACs' directors to conduct three tests of the model predictions. First, we use a triple interaction term to show that the elasticity of the entrant's compensation to the incumbent's compensation is increasing in the liquidation risk of the incumbent, but only in the competition region that is structurally derived from the model. In other words, if an entrant decides to buy the loyalty of the director, it is not sufficient to outbid the incumbent by one dollar, as a standard model would suggest, the entrant needs to pay a significant premium for stealing a target from a SPAC that is close to its liquidation boundary. When the initial compensation of the director is too high or when the liquidation risk is too high, the entrant is likely to wait patiently in the queue for its turn to get a good target. In this case, the director's compensation does

not depend on the liquidation risk of the incumbent, exactly as predicted by the model.

Next, we construct a sample of incumbent-entrant pairs linked by a common director. We define a dummy equal to one if an entrant inefficiently received a target before the incumbent. We use a logit model to study how the probability of the inefficient allocation of a target depends on the compensation of the director in each of the SPACs and on the incumbent's liquidation risk. We find that this probability is increasing in the compensation that the entrant pays to the director and is decreasing in the incumbent's compensation and liquidation risk. Directors that have significantly more shares in the SPAC that has more remaining time to search for a target prefer for this SPAC to merge with a target rather than to allocate the target to the other SPAC that IPOed earlier and has a tighter deadline to find a target. These results show that the endogenous conflict of interest that the entrant SPAC generates has real consequences.

Besides SPACs' decisions and directors' decisions, we also analyze investors' decisions. When a SPAC announces a target, investors have the right to redeem their shares for \$10, which is the amount they paid at the IPO. In theory, this redemption option should provide sufficient protection for investors against conflicted investors. Sophisticated investors should exercise their options and redeem the shares when directors misallocate good targets. We find that there are unsophisticated investors who do not redeem shares optimally. These investors' returns suffer significantly from the conflicted directors' decisions. Specifically, we find that investors of the entrant SPAC benefit from front-running the incumbent SPAC, while the investors of the incumbent SPAC lose when an entrant SPAC gets a deal earlier. These results suggest that financial regulation might be needed to protect unsophisticated investors and improve merger quality.

**Related literature.** The paper contributes to several strands of literature. The theoretical contribution is to the principal-agent literature that studies optimal contracts between a principal and an agent who needs to exert unobservable effort. Sensitivity to performance

is an important feature of such contracts (Grossman and Hart (1983); Holmstrom and Milgrom (1987)). Fershtman and Judd (1987) study a case with two competing principals, each one with one agent. Szentes (2014) further extends it to the case with multiple agents and multiple principals. Our model studies a competition between two principals for the loyalty of one agent who compares two contracts that are sensitive to performance. Moreover, in our case, two principals contract with the agent sequentially. If the entrant offers a slightly better contract than the incumbent, that would not be sufficient because the agent faces a higher liquidation risk on the incumbent's contract. We characterize when the competition will take place and, if it does, how much premium the entrant needs to pay to outcompete the incumbent.

The second strand of literature is corporate governance because, in our case, the principal sponsors a SPAC, and the agent is a director. The role played by directors is one of the most important questions in the corporate governance literature (Shleifer and Vishny, 1997). Extensive research studies board interlocks, in which the same director sits on the boards of multiple companies.[2] Levit and Malenko (2016) show that directors' desire to be invited to other boards creates strategic complementarity of corporate governance across firms. In recent work, Cai et al. (2022) shows that incumbent directors are more likely to appoint new directors who have connections to the incumbent board. We contribute to this literature by studying interlocks between SPAC boards. Due to the nature of SPACs, if interlocked boards introduce a conflict of interest, it should be most pronounced for SPACs. Our paper provides strong evidence for such conflicts, which can have implications for non-SPACs directors' behavior as well.

Our paper also contributes directly to the SPACs literature. Klausner et al. (2020) find that the post-merger performance of SPACs is worse than companies that went public through the traditional IPO process. They argue that SPACs suffer from much larger dilution

[2]See e.g. Pfeffer 1972, Palmer 1983, Westphal and Zajac 1997, Mizruchi 1989, Fich and White 2005, Larcker et al. 2013, Chiu et al. 2013, Renneboog and Zhao 2014, Faleye et al. 2014, Akbas et al. 2016, Garcia-Bernardo and Takes 2018, and Cheng et al. 2019.

than a traditional IPO, and investors who do not redeem their shares bear the dilution cost. Ritter et al. (2021) find that warrant investors enjoy a much higher return than common share investors. Fortney (2021) puts forward a legal analysis of SPAC directors' compensation and its implications for SPAC's directors under Delaware law. Luo and Sun (2021) show that SPACs are incentivized to merge with low-quality targets as they approach the deadline. Our paper contributes to the SPAC literature by linking the director network to SPACs' performance. Moreover, this paper looks at all SPACs that went through the IPO process, including those SPACs that have not gone through the de-SPAC process. Most importantly, our paper is the first to identify the conflict of interest faced by SPAC directors on interlocked boards. We study this problem from three angles: the decisions of investors, the decisions of directors, and the decisions of sponsors. The results suggest that a policy to restrict interlocked boards in SPACs will boost investors' protection and improve the quality of mergers of SPACs with private firms.

This paper also relates to the literature that studies incentives in the financial industry. Del Guercio et al. (2018) show that mutual funds whose managers also manage hedge funds significantly underperform their peers because of the managers' conflict of interest. Egan et al. (2017) show that brokers' conflicting interests can result in dominated bonds allocated to investors' portfolios. Egan et al. (2019) study the prevalence of misconduct in the financial industry. Chalmers and Reuter (2020) show how the conflict of interests affects financial advice about portfolio allocation. Our paper contributes to this literature by showing that SPAC directors' incentives result in losses to unsophisticated investors who trust directors to act in their best interest.

# 2 Institutional Details

## 2.1 SPAC Directors' Conflict of Interest

Special Purpose Acquisition Companies (SPACs) are known as "blank-check" shell companies created for the sole purpose of acquiring an unspecified target company. The nature of the blank check company means that the company has no operating business or assets other than a limited investment at the time of its IPO. All IPO proceeds are put into a trust account and cannot be used for any operating business up until the merger is completed. The sponsors put their own money as "risk" capital to cover the operating expenses and, in return, get "founder shares" equal to 20% of the total post-IPO outstanding shares. After IPO, the SPAC starts the target-searching process. Once a suitable target is located and a merger deal is negotiated, the SPAC announces the target to the public, and the "deSPAC" process starts. Before the merger is completed, public investors have the right to redeem their shares back in exchange for their initial investment plus any interest accumulated in the trust account. Through a successful merger, the private company becomes publicly listed using the deSPAC process. The target-searching and the deSPAC process need to be completed within 2 years (investors can vote to extend the deadline to finish an announced merger). Otherwise, the SPAC is liquidated, and all founder shares become worthless. Figure 2 illustrates the life cycle of a typical SPAC.

**Figure 2: SPAC Life Cycle**

This figure illustrates the typical timeline of a SPAC.


The SPAC's sponsor elects SPAC's directors. Unlike operating companies, the SPAC's board of directors also plays the management role. A SPAC's management team usually

consists of around five directors and another non-director officer who is usually a secretary. For this reason, we do not distinguish managers and directors throughout our analysis.

The primary function of the SPAC board is to find and select a private operating company with which the SPAC can merge. Upon completion of the SPAC's IPO, the SPAC's directors begin the process of locating, identifying, pursuing and reviewing potential target companies. Directors may bring to the SPAC's attention target business candidates that they become aware of through their business contacts as a result of informal inquiries or discussions they may have, as well as attending trade shows or conventions. In addition, SPACs' directors' contacts and corporate relationships in various industries developed throughout their careers are also crucial in building proprietary deal flow opportunities.

Importantly, SPACs' directors are not obligated to bring all opportunities to the SPAC. Most SPACs are incorporated in Delaware, where the corporate opportunity waivers (COWs) introduced in 2000 exempted directors from fiduciary restrictions of using board information in pursuit of outside corporate opportunities. Other SPACs are also incorporated in states (countries) that are loose on the legal liability associated with the fiduciary duty of the director[3]. Without the fiduciary duty, overlapping SPAC directors are exempted from a particular legal liability as they could not be accused of carrying confidential board information to a rival SPAC board. This leads to serious concerns about the conflict of interest in interlocked SPACs boards.

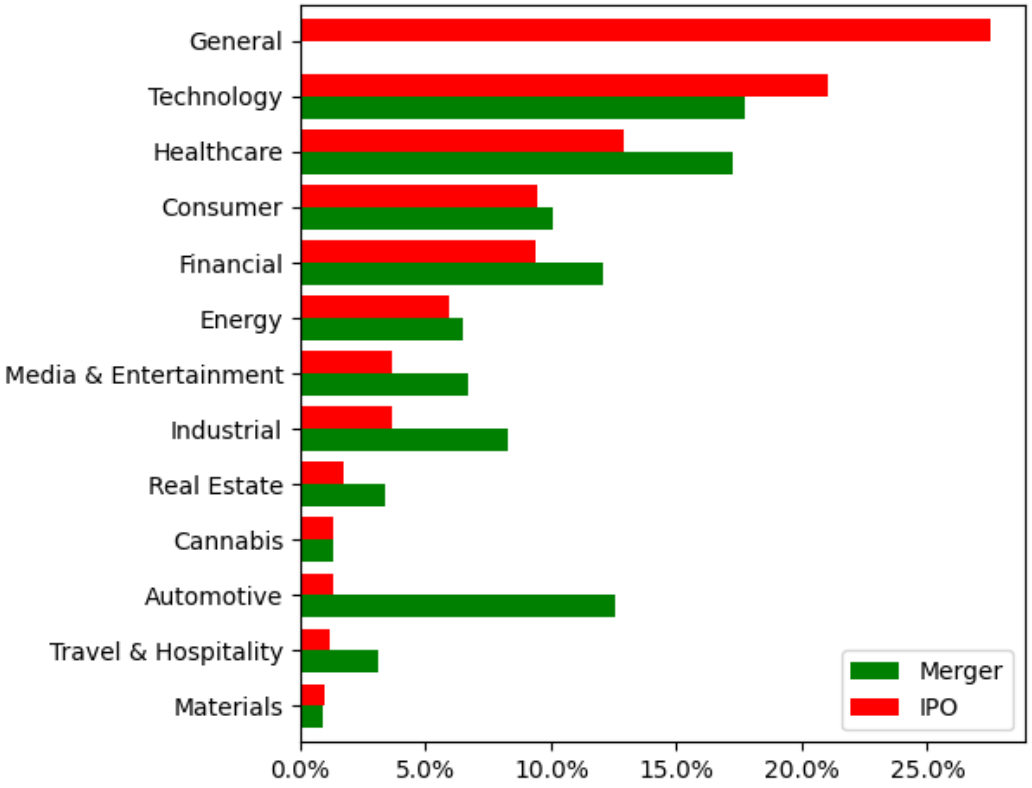
Empirically, it is quite common that a SPAC's director also sits on the board of another SPAC competing with the focal SPAC for acquisition opportunities. At the time of an IPO, SPACs sometimes mention several industries that they intend to focus on. However, these targeted industries are broadly defined, and SPACs are not obligated to merge with a target in the specified industries. Figure 3 reports the distribution of target industries mentioned in SPACs' IPO prospectuses. About one-third of SPACs in our sample do not target any

[3]Table A.2 reports the state (if incorporated in the U.S.) or country in which the SPAC is incorporated at the time it files for its IPO for the SPAC sample used in our analysis.

specific industry. The distribution of specified target industries and the industries of actual post-merger companies do not always match either. As a result, the director who sits on boards of competing SPACs may become aware of investment and business opportunities that are appropriate for presentation to both SPACs.

**Figure 3: Distribution of the SPAC's Target Sector at IPO**

This figure reports the percentage distribution of sectors targeted at IPO and sectors of post-merger companies of SPACs that filed original S-1 filings from January 2010 to December 2021.




In such circumstances, the director may have conflicts of interest in determining to which SPAC a particular business opportunity should be presented. The conflicts may not be resolved in the focal SPAC's favor, and a potential target may be presented to a rival SPAC. If the rival SPAC decides to pursue such an opportunity, the focal SPAC may be precluded from procuring such an opportunity. In the S-1 reporting to the SEC, SPACs usually warn investors that investment ideas generated within the SPAC, including by any of the SPAC's directors, may be presented by a director to the rival SPAC.

## 2.2 Directors' Compensation

Directors are expected to exert unobservable effort in finding a high quality target for a merger. To align their incentives, SPAC directors receive pre-IPO founder shares from the sponsor. The performance-based compensation is backloaded, which sets up a stage for the conflict of interest that we study. Unlike publicly issued SPAC shares, founder shares are not redeemable and become worthless if no suitable merger candidate is found within two years. On the other hand, these founder shares become very valuable upon a merger. For example, following Churchill III's merger, each director held, on average, shares valued at over $3 million. This level of compensation serves as a powerful economic incentive for the director to prioritize a competing SPAC that offers a larger number of founder shares, even though the focal SPAC faces a higher liquidation risk.

Taking the director's conflict of interest problem into account, entrant SPACs that are new to the market will have the incentive to endogenously induce the director to misallocate the target by aggressively compensating directors sitting on the board of incumbent SPACs. As a result, the incumbent SPACs may lose suitable targets to their competitors.

## 2.3 Consequences of Conflicts: Value-decreasing Mergers

The potential conflicts described above may limit the SPAC's ability to enter into a business combination, which may adversely affect the SPAC's performance. To avoid liquidation, a SPAC is incentivized to enter into a value-decreasing merger with a low-quality private company, leading to losses by unsophisticated investors.

The institutional background sheds light on the causes and consequences of the conflict of interest problem faced by directors sitting on the boards of competing SPACs. In the next section, we build a simple model to analyze the endogenous conflict of interest that emerges from competition between two principals (SPACs) and one agent (a director).

# 3 Model and Testable Hypotheses

## 3.1 Model Setup

Consider an incumbent SPAC and an entrant SPAC share a director. Both the SPACs and the director are risk neutral and have a common discount rate $r = 0$. We study the entrant's decision to compensate the director at the time of the entrant's IPO. The main role of the director is to find a target for the SPAC.

**Targets** We assume that there are two types of targets: a good target that generates a high post-merger return and a bad target with a low post-merger return. We assume that good targets arrive at a Poisson rate $\lambda$. When a good target arrives, the director decides whether to allocate it to an incumbent or to an entrant SPAC. We assume bad targets are always available. If a good target is not allocated to a SPAC before its deadline, the SPAC merges with a bad target, consistent with the empirical observation that liquidations are rare. We assume both SPACs can only find good targets through the shared director. Without loss of generality, the post-merger share price is normalized to 1 when the SPAC merges with a good target and normalized to 0 when the SPAC merges with a bad target.

**Figure 4: Timeline**


**Timeline** Figure 4 represents the time flow of our model, which consists of events occurring in the following order:

1. At time 0, the incumbent SPAC gets publicly listed and offers the director $S_I$ shares. The director starts searching for targets for the incumbent.

2. At time $\tau$, the entrant SPAC gets publicly listed and invites the same director to sit

on its board. The entrant offers the director $S_E$ shares out of its $S$ founder shares[4].

3. The director searches for good targets with the arrival rate $\lambda$. Good targets are short-lived. Receiving a good target, the director can choose to allocate the target to one of her SPACs that has not found a target. Allocated with a good target, the SPAC merges with the target through the deSPAC process and exits the game;

4. If no good target arrives during $[0, \tau]$, then during $(\tau, T)$, the director chooses to allocate available targets to either the incumbent or the entrant until both SPACs merge with a good SPAC.

5. At time $T$, if no target has been allocated to the incumbent, the incumbent merges with a bad target, and the game continues;

6. At time $T + \tau$, if no target has been allocated to the entrant, the entrant merges with a bad target, and the game ends.

## 3.2 Equilibrium Concept

We focus on the subgame perfect equilibrium of the extensive game. There is perfect information in our game since each player when making any decision, is perfectly informed of all the events that have previously occurred. We begin by defining the notion of the game.

**Definition 1.** *An extensive game with perfect information that models the entrant and the director's decisions is* $< N, H, P >$*, which has the following components.*

- *A set of players* $N = \{entrant, director\}$*;*
- *A set* $H$ *of finite sequences that consists of histories* $\emptyset$*,* $(S_E)$*;*
- *The entrant makes the first move,* $P(\emptyset) = entrant$*, and the director makes the second move,* $P(h) = director$ *for the history* $h \neq \emptyset$*.*

[4]SPACs' IPO offer prices are uniformly \$10, so we focus on the quantity.

Next, we characterize the players' strategies. The strategy of the entrant is to choose director's compensation $S_E \in (0, S)$. The strategy of the director is to choose to allocate the first available target to the entrant or the incumbent. Therefore, her strategy can be characterized by ($\omega \in \{E, I\}$). Below we define the equilibrium concept used throughout the paper.

**Definition 2.** *A subgame perfect equilibrium with perfect information is a strategy profile $s^*$ in $\mathcal{T}$ such that for every player $i \in N$ and every history $h \in H$, the strategy profile $s^*|h$ is a Nash equilibrium of the subgame $\mathcal{T}(h)$.*

## 3.3 Model Solution

We use backward induction to solve the model. We start with analyzing the director's problem. The director faces an allocation decision if the first target arrives after the entrant's IPO date $\tau$ and before the incumbent's liquidation deadline $T$. Let $\delta \in (\tau, T)$ be the arrival time of the first target, and $F_\omega$ be the director's expected payoff conditional on allocating the target to SPAC $\omega \in \{E, I\}$. Then, the director's problem can be represented by,

$$\max_{\omega \in \{E,I\}} F_\omega$$
$$s.t. \quad F_\omega \equiv \begin{cases} S_E + (1 - e^{-\lambda(T-\delta)})S_I, & \omega = E \\ S_I + (1 - e^{-\lambda(T+\tau-\delta)})S_E, & \omega = I \end{cases}$$

**Proposition 1.** *In equilibrium, the director allocates the first available target to the entrant when $S_E \geqslant e^{\lambda\tau} S_I$, and allocates it to the incumbent when $S_E < e^{\lambda\tau} S_I$.*

*Proof.* See Appendix. □

The intuition underlying Proposition 1 suggests that the director is more likely to allocate the first available good target to the entrant if she receives more compensation from the

entrant and less compensation from the incumbent and if the incumbent faces a lighter time constraint.

Next, we turn to the entrant's problem. Taking the director's choice into consideration, the entrant chooses the optimal level of compensation for the director. Let $\pi_c^n$ be the entrant's expected payoff when the number of good targets arrived between $(\tau, T)$ is $n$, and $S_E \geqslant e^{\lambda\tau} S_I$; $\pi_{nc}^n$ be the entrant's expected payoff when the number of good targets arrived between $(\tau, T)$ is $n$, and $S_E < e^{\lambda\tau} S_I$. Then the entrant's problem can be represented by,

$$\begin{aligned} & \max_{S_E} \{\pi_c, \pi_{nc}\} \\ s.t. \quad & \pi_c = \Pr(n=0)\pi_c^0 + \Pr(n=1)\pi_c^1 + \Pr(n \geqslant 2)\pi_c^{2+}, \quad S_E \geqslant e^{\lambda\tau} S_I \\ & \pi_{nc} = \Pr(n=0)\pi_{nc}^0 + \Pr(n=1)\pi_{nc}^1 + \Pr(n \geqslant 2)\pi_{nc}^{2+}, \quad S_E < e^{\lambda\tau} S_I \end{aligned}$$

**Proposition 2.** *The unique equilibrium of the game is characterized by,*

- *if* $S_I \leqslant \frac{\lambda(T-\tau)e^{-\lambda(T+\tau)}}{1-e^{-\lambda T}} S$, $S_E^* = e^{\lambda\tau} S_I$, *the director allocates the first available good target to the entrant;*
- *if* $S_I > \frac{\lambda(T-\tau)e^{-\lambda(T+\tau)}}{1-e^{-\lambda T}} S$, $S_E^* = 0$, *the director allocates the first available good target to the incumbent.*

*Proof.* See Appendix. □

Proposition 2 defines two regions. In the region where $S_I \leqslant \frac{\lambda(T-\tau)e^{-\lambda(T+\tau)}}{1-e^{-\lambda T}} S$, it is optimal for the entrant to compete with the incumbent for the first available good target. To compete, the entrant offers a higher compensation than the incumbent does. Moreover, the elasticity of the compensation increases with the entrant's time advantage. In the second region where $S_I > \frac{\lambda(T-\tau)e^{-\lambda(T+\tau)}}{1-e^{-\lambda T}} S$, it becomes too expensive for the entrant to compete, and the entrant offers the director minimal compensation unrelated to the entrant's time advantage.

## 3.4 Investors' Payoffs

So far, we have shown that the director may be incentivized to prioritize the entrant. Next, we compare the incumbent's investors' payoffs in cases when the director's conflict of interest plays a role versus not. Formally, we have the following proposition.

**Proposition 3.** *When the director prioritizes the entrant, the incumbent SPAC's expected post-merger share price is lowered by* $\lambda(T-\tau)e^{-\lambda T}$.

*Proof.* See Appendix. □

Proposition 3 shows that the incumbent's investors suffer losses due to the director's conflict of interest problem. The director searches for targets solely for the incumbent before the entrant enters the market during $[0, \tau]$. After $\tau$, the director prioritizes the entrant when a good target arrives, and the incumbent can only wait for the next available target. Thus, the incumbent's expected loss is proportional to its overlapping period with the entrant $(T-\tau)$.

## 3.5 Testable Hypotheses

The model provides unique implications on both the director's and the entrant's decisions as well as the entrant's and the incumbent's relative deSPAC performance. Specifically, we have the following hypotheses:

1. *Directors' Decisions.*—The director is more likely to allocate the first available target to the entrant when she receives more compensation from the entrant and less from the incumbent. [Proposition 1]

2. *Entrants' Decisions.*—When competition is optimal, the entrant's compensation level is proportional to the number of founder shares the director receives from the incumbent. Specifically, the proportion increases in the two SPAC's liquidation deadline $\tau$ and

follows an exponential function $e^{\lambda\tau}$. When waiting for the next available target is optimal, the entrant compensates the director for a minimum number of founder shares. [Proposition 2]

3. *DeSPAC Performance.*—An incumbent's deSPAC performance becomes worse when a connected entrant announces a target before it. [Proposition 3]

Next, we empirically test the above implications using a comprehensive SPAC dataset and provide evidence consistent with each of the implications. We start by describing our data sources and how we constructed our sample.

# 4 Data and Variables

## 4.1 Data Sources and Sample Construction

One of our contributions is to create one of the most comprehensive SPACs databases that are currently available. The SPAC data come from two commercial SPAC databases: SPAC Research[5] and PrivateRaise's SPAC Search[6], which include all SPACs that register an S-1 filing with the Securities and Exchange Commission (SEC) from January 2010 to December 2021. The data show information about individual SPACs collected via public filings, including the deal structure, the timeline of key events, and the de-SPACing outcomes. We exclude SPACs that are traded in the Over-the-Counter (OTC) markets due to potential unobserved differences between SPACs traded in major exchanges and OTC markets. We further supplement our data sample with SDC Platinum's new issue database, which provides information about the exercise of the over-allotment option during the SPAC's IPO process. We further hand-collect historical pricing data for each SPAC from Bloomberg.

[5]https://www.spacresearch.com/
[6]https://www.privateraise.com/

We construct a SPAC directors' network based on the SPAC's past and concurrent connections to other SPACs through common board members. We obtain the SPAC management team's identities at the time of its IPO by web-scraping the 424-B4 and 424-B3 filings from Edgar. For each SPAC, Edgar provides the name, age, and position of the SPAC manager. We match Edgar's SPAC management team to our SPAC sample using the Central Index Key (CIK). To the best of our knowledge, ours is the first paper to use web-scraped data for the SPAC's complete board member information from SEC filings 424-B4 and 424-B3.

To study the SPACs' board's composition and sponsors' credentials, we hand-collect biographical information on current and prior boards of directors and senior company officers from Capital IQ. Specifically, we collect the name, age, gender, the director's current and past roles, and the start and end years for every company at which they served, a binary variable indicating whether the individual serves (served) on the board of directors in the current (past) employment position, all the graduate and undergraduate degrees they received, and the institutions that granted the degrees. We group the degrees into four categories: (i) JD/MD (Juris doctorate or medical doctorate degree), (ii) MBA (Master of Business Administration), (iii) Master (Master of Arts or Master of Science), and (iv) Bachelor (general undergraduate). We group the work experience into three categories: (i) CEO Public (chief executive officer at a public company), (ii) Investment Banking (board director at an investment bank), and (iii) VC/PE (board director at a venture capital or private equity firm). We then manually match each individual in the SPAC's management team to individuals in Capital IQ.

In addition to the SPAC's characteristics and the director's biographical information, we also need to know the director's compensation. We complement our data with the director's beneficially owned shares data from the Capital IQ database.

Following the methodology described above, we identify 972 SPACs that IPOed between

January 2010 and December 2021, and either merged (271), announced a target (146), are still looking for a target (534) or were liquidated (21). This is the base sample we use in our analysis.

Panel A of Table 1 shows the main characteristics of the SPACs in our sample. An average SPAC raises 279 million US dollars through its IPO process, which includes a base amount of 251 million dollars, and an exercised overallotment option of 29 million dollars. The average IPO investor earns a 1.83% first-day return. When a SPAC announces a target, it is roughly 13 months away from its liquidation deadline.

A SPAC's board contains roughly 5 directors, with an average age of 54 years old. The management team also has another officer that does not sit on the board. About 16 percent of SPAC directors are female and 17 percent are(were) chief executive officers in a publicly-traded, non-SPAC company. 7 percent are(were) directors in investment banks, and 14 percent serve(served) in that role in venture capital or private equity firms. In terms of educational background, 13 percent of directors hold a JD/MD degree, 38 percent have a Master's in Business Administration (MBA) degree, 19 percent of directors have a general master's degree, and over 81 percent of directors have a bachelor's degree.

To the best of our knowledge, the result is the most comprehensive database on SPACs, their performance, their investors, and their boards.

## 4.2 Directors' Network Measures

We define the SPAC director's network ("board interlock network") as a directed graph $g$, in which each SPAC is a node, and a SPAC has an out-edge to another SPAC if the two share at least one board member. Two types of connections exist based on the other SPAC's status: past connections to non-competing SPACs that have successfully deSPACed at the time of the focal SPAC's IPO, and connections to competing SPACs that have target-searching periods overlapping with the focal SPAC. Figure 5 visualizes the status of the

SPAC's board interlock network in December 2021. We can further split connections into four groups based on the competitor's IPO date and target announcement date. We describe the details below.

*Past Connections.*—A director may help other SPACs successfully deSPACed in the past before the focal SPAC's IPO. We define *Past Connections* as the number of such SPACs that share at least one director with the focal SPAC. Since

*Connections.*—A SPAC's target searching period may overlap with another SPAC. During the overlapped period, the two SPACs are potential competitors: reaching out to suitable targets and signing exclusive merger agreements. In addition, they are connected if they share the same director, who faces a conflict of interest problem when a potential business combination candidate that is suitable for both the SPACs becomes aware of her. In such circumstances, she needs to choose between the two competing SPACs. We thus define the *Connections* a SPAC has as the number of other competing SPACs that share at least one director with the focal SPAC.

*Announced vs. Searching.*—By assigning a potential target to a competing SPAC, the director excludes the focal SPAC from pursuing such an opportunity. As a result, the focal SPAC may need to search for other targets. Empirically, we expect the competing SPAC to announce its target before the focal SPAC when the director prioritizes the competing SPAC. Thus, we define *Announced* as the number of competing SPACs that announce their targets before the focal SPAC. Accordingly, *Searching* counts the number of competing SPACs that are still searching for targets at the time of the focal SPAC's target announcement.

*Incumbent vs. Entrant.*—SPACs have two years to search for a target and complete the business combination. Two SPACs started searching for targets at different points in time to face different liquidation risks at a specific point in time. A director's choice may be biased towards the relatively older SPAC when a suitable target becomes available. Thus, we define *Incumbent* to be the number of connected competitors that have their IPO before the focal

SPAC, and *Entrant* to be the rest of connected competitors that search for targets after the focal SPAC.

Together, we split SPAC's connections to competing SPACs into four categories. Figure 6 gives an illustrative example of the construction of our network measures. In this figure, SPAC A is our SPAC of interest. SPAC A's directors are connected to four types of other SPACs that have their target searching periods overlap with SPAC A. By their IPO date relative to SPAC A, we group SPACs B and D together and categorize them as "incumbent", and SPACs C and F together as "entrant". Based on the timing of finding a target relative to SPAC A, we can group SPACs B and C as "announced" and SPACs D and E together as "searching". In the end, we will have four different types of connections: Incumbent, Announced (connections to SPAC B); Incumbent, Searching (connections to SPAC C); (iii) Entrant, Announced (connections to SPAC D); (iv) Entrant, Searching (connections to SPAC E).

Panel A of Table 1 shows that roughly half of the SPACs in our sample connects to a competitor during the target searching stage. About 70% of the connected competitors are incumbents who started searching for targets before the focal SPAC, and the rest 30% competitors are entrants who entered the market after the focal SPAC. 15% of the incumbents found a target before the focal SPAC, and 14% of the entrants announced their targets earlier than the focal SPAC.

## 4.3 DeSPAC Performance Measures

*Redemption Rate.*—Percentage of public shares redeemed. Public investors have the choice to redeem their shares back after the business combination is announced if they do not want to invest in the post-merger company. Keeping holding on to shares instead of redeeming them is akin to traditional public equity investing and no longer comes with redemption rights after the merger is completed. Thus, a higher redemption rate indicates

a worse market reaction to the proposed merger. In addition, most merger deals require the SPAC to meet a minimum cash requirement. If more than a certain share amount is redeemed, the minimum cash amount set forth in the merger agreement may not be satisfied, and the business combination may not be completed. Thus, the redemption rate also measures the liquidation risk of the SPAC.

*Post-merger Return.*—A SPAC's post-merger return is measured as the percentage return of the SPAC's share at the deSPAC stage. Specifically, we follow the methodology used in Klausner et al. (2020) by first defining the redemption price, which is the price at which the SPAC trades the day before the merger is announced. Using that price, we then calculate the post-merger returns for each SPAC as follows:

$$\textit{Post-merger return} := \frac{\textit{Business Combination Closing Price}}{\textit{Redemption Price}} - 1,$$

Panel A of Table 1 shows that after the target announcement, 46 percent of SPAC shareholders choose to redeem their shares. Investors who keep holding their SPAC shares on average receive 18.30% post-merger returns.

## 4.4 SPAC Pairs

To examine entrant and director decisions, we create a database of all connected SPAC pairs in our sample, where each pair consists of two SPACs: an incumbent and an entrant. The incumbent went public before the entrant, and the two SPACs share at least one board member. Thus, each observation represents a triplet of (entrant, director, incumbent).

Panel B of Table 1 summarizes the SPAC pairs. In total, we have 197 entrants linked with 205 incumbents, generating 557 triplets of (entrant, director, incumbent). On average, 60% of entrants found a target earlier than incumbents. Directors receive 0.89 million shares from entrants and 1.10 million shares from incumbents. There is a 90-day gap between the

liquidation deadline of the incumbent and the entrant. Around 81% of entrants face a lower cost of competition. Entrants, in general, raise less cash through the IPO process. The average IPO proceeds for entrants and incumbents are 369 and 435 million dollars, respectively. The incumbent and the entrant have similar board sizes, consisting of 6 directors.

We identify approximately 4,056 directors for our SPAC sample. 343 directors are invited to join an entrant SPAC's board while simultaneously searching for targets for other incumbent SPACs. We compare the key characteristics of these "connected" directors with other directors to understand the reason why entrant SPACs are chasing these directors, even though they may face conflicts of interest in allocating suitable targets.

Table 2 shows the main characteristics of connected directors and compares them to all other directors for SPACs in our sample. Connected directors, on average, have more experience in SPACs, managing public companies, and other investment-related business, i.e., they participated in more SPACs that deSPACed in the past, and have more work experience as either executives or directors in public companies, investment banks, as well as VC/PE companies. Moreover, they receive more than twice as many founder shares as those received by other directors.

Table 3 provides additional evidence on the connected directors' potentially higher ability in finding targets and completing SPAC deals using logistic regressions. SPACs are more likely to invite competitors' directors who have a history of making successful SPAC deals to join its board. In addition, directors who were directors in investment banks or current executives in VC/PE firms are more likely to join a competing SPAC board. Our results are consistent with the story that experienced SPAC directors who have developed long-term relationships with a wide range of private companies are well-positioned to identify and execute attractive business combination opportunities and are invited to join multiple SPACs that are simultaneously seeking targets.

Sitting on the boards of two competing SPACs, the director faces a conflicted choice

when a target suitable for both SPACs becomes available: she can allocate the target to the incumbent SPAC that faces a higher liquidation risk, or she can allocate the target to the entrant SPAC when enough compensation is provided. Next, we show that new SPACs strategically set connected directors' compensation levels based on incentives to compete with the incumbent SPACs.

# 5 Empirical Methodology and Evidence

In this section, we empirically test the main implications of our model.

## 5.1 Directors' Decisions

The intuition behind Proposition 1 is as follows. A director evaluates both her skin in the game and the entrant's continuation value when she makes the decision. On the one side, she leans towards the entrant if she receives more compensation from the entrant and less from the incumbent. On the other side, she feels less pressured to immediately sacrifice the incumbent if the entrant is young enough and still has a lot of time to search for a target.

We use a logit regression to test the above implications. Specifically, we estimate the following empirical model,

$$\mathbb{1}\{\texttt{Entrant}\} = logit(\beta_1 \texttt{Shares}_{entrant} + \beta_2 \texttt{Shares}_{incumbent} + \beta_3 \tau + \mathbf{X}\boldsymbol{\Delta} + \epsilon), \tag{1}$$

where each observation is a triplet of {entrant, director, incumbent}. $\mathbb{1}\{Entrant\}$ is a dummy variable equal to one if the entrant announced the target before the incumbent, and zero otherwise. $Shares_{entrant}$ and $Shares_{incumbent}$ are the number of shares the director receives from the entrant and the incumbent, respectively. $\tau$ is the number of days difference between the liquidation deadline of the incumbent and the entrant. $\mathbf{X}$ contains a set of control

variables that control for the difference between the incumbent and the entrant, as well as the characteristics of the director.

According to Proposition 1, we should expect a positive estimation coefficient of $\beta_1$ and negative coefficients of $\beta_2$ and $\beta_3$.

We present estimation results of Eq. (1) in Table 5. The dependent variable, $\mathbb{1}\{Entrant\}$, is a binary variable equal to one if the entrant found a target before the incumbent. Column (1) includes three key explanatory variables: the number of shares the director receives from the entrant, $Shares_{entrant}$; the number of shares the director receives from the incumbent, $Shares_{incumbent}$; and the difference in the liquidation deadlines between the entrant and the incumbent, $\tau$. The signs on the estimated coefficients align with the model predictions: the director is more likely to first propose a target to the entrant rather than the incumbent if she receives more compensation from the entrant and less compensation from the incumbent. In addition, when the entrant is much younger than the incumbent, the entrant still has plenty of time to search for a target after the incumbent liquidates, i.e., when $(T-t)$ is larger, the director is less likely to prioritize the entrant.

In Table 5, column (2), we control for differences in the two SPACs and directors' characteristics that can also explain the relative speed of searching for a target. SPACs that raised more money through the IPO process may search for companies that have a higher evaluation, which presumably takes a longer time to negotiate. Also, having more directors on the board potentially enlarges the pool of target candidates and increases the efficiency of the screening and negotiation process. Directors' past and current connections to other SPACs can also affect the relative order of finding a target. If a director is currently serving on the board of two incumbents, with enough compensation from the entrant, the director is incentivized to tunnel targets candidates that are suitable for both the incumbents to the entrant. Thus, the entrant is more likely to find a target first. On the other hand, the director's experience from previous deals indicates her ability to find a target. A more experienced

director is more likely to find a target than other directors within the same period. Thus, an entrant with a more experienced director may be more willing to wait after the director finds a target for the incumbent rather than competing for the incumbent's target at a high cost. In addition, Column (2) also controls for the director's biographical information, working experience, and educational level.

In Table 5, column (3), we additionally add dummies for the entrant's IPO quarter to control for the difference in the market condition. Column (4) includes the entrant's IPO sector dummies to control for the possible time difference in finding targets in different industries. Fig. A.1 plots the area under the Receiver Operating Characteristic (ROC) curve for specification (4). The area under the curve equals 0.8618, indicating our empirical model's classification accuracy is "excellent", according to the rule of thumb from Hosmer Jr et al. (2013). For all specifications, we cluster standard errors at the director level to allow correlation between the same director's preferences.[7]

In Table 5, column (4), we show that if the director receives one standard deviation more shares from the entrant, the estimated probability of the entrant finding a target before the incumbent increases by 3.1 percentage points (5.2% of the sample mean), holding all other variables constant at their average values. In contrast, if the incumbent compensates the director with one standard deviation more shares, the entrant's chance of finding a target first decreases by 9.4 percentage points (15.7% of the sample mean). On the other hand, if the difference in the liquidation deadlines increases by one standard deviation, the entrant's likelihood of finding a target ahead of the incumbent decreases by 17.2 percentage points (28.6% of the sample mean).

[7]Results in Table 5 are robust to other clustering methods too, including clustering at the entrant level, at the (entrant, director) level, and the (entrant, director, incumbent) level.

## 5.2 Entrants' Decisions

Next, we test Implication 2, which directly flows from Proposition 2. The implication indicates that when an entrant decides to invite a director who also sits on a board of a competing incumbent to join its board, the entrant's optimal choice of compensation takes two different functional forms based on a cutoff: $\mathbb{1}\{Competition\} \equiv \mathbb{1}\{S_I \leqslant \frac{\lambda(T-\tau)e^{-\lambda(T+\tau)}}{1-e^{-\lambda T}} S\}$. When $\mathbb{1}\{Competition\}$ equals one, it is optimal for the entrant to compete with the incumbent for the first available target by providing the director with a compensation level that is an exponential function of the two SPACs' liquidation risk difference, $\tau$. However, when $\mathbb{1}\{Competition\}$ equals zero, competition becomes too costly for the entrant, and minimal compensation is provided to the director.

We use a triple interaction to capture this nonlinear relationship. Specifically, we estimate the following regression model,

$$\begin{aligned}
\texttt{Shares}_{entrant} = {} & \beta_1 \texttt{Shares}_{incumbent} \times e^{\lambda\tau} \times \mathbb{1}\{\texttt{Competition}\} \\
& + \beta_2 \texttt{Shares}_{incumbent} \times e^{\lambda\tau} \\
& + \beta_3 \texttt{Shares}_{incumbent} \times \mathbb{1}\{\texttt{Competition}\} \\
& + \beta_4 e^{\lambda\tau} \times \mathbb{1}\{\texttt{Competition}\} \\
& + \beta_5 \texttt{Shares}_{incumbent} + \beta_6 e^{\lambda\tau} + \beta_7 \mathbb{1}\{\texttt{Competition}\} + \mathbf{X}\boldsymbol{\Delta} + \epsilon, \qquad (2)
\end{aligned}$$

where $Shares_{entrant}$, $Shares_{incumbent}$, and $\tau$ are defined same as the previous section. $\mathbf{X}$ contains a set of control variables of the entrant and the director's characteristics that may affect the director's compensation.

According to Proposition 2, we should expect a positive and significant estimate of $\beta_1$, which suggests that when the competition cost is low, the marginal effect of $S_I$ on $S_E$ is increasing in $\tau$. On the other side, we expect a zero estimate of $\beta_2$, meaning that when the

competition cost is too high, $\frac{\partial S_E}{\partial S_I}$ is no longer related to $\tau$.

We present the estimation results of Eq. (2) in Table 4. We use the average number of days for an entrant to find a target to proxy for $\lambda$, which equals 148 days. Column (1) includes the key explanatory variables in the model. The directions of the coefficient estimates align with the implications from Proposition 2. The positive sign on the triple interaction term, $Shares_{incumbent} \times \tau \times \mathbb{1}\{Competition\}$, suggests that when the competition cost is relatively low, the entrant compensates the director with shares proportional to what she receives from the incumbent. In addition, the marginal compensation is larger if the entrant is younger and still has plenty of time to search for a new target. In contrast, we find a zero coefficient estimate on $Shares_{incumbent} \times \tau$, which aligns with the model prediction that when the competition cost is too high, the entrant chooses to wait for future targets instead of competing with the incumbent for currently available targets. Thus, the entrant no longer needs to consider the relative liquidation risk difference when compensating the director.

In Table 4, columns (2)-(5), we gradually introduce different sets of control variables that may also affect the director's compensation from the entrant. Column (2) controls the characteristics of the entrant and the director. Column (3) controls for the entrant's IPO underwriter fixed effects to ease the concern that directors may receive a larger compensation due to connections to reputable underwriters. Column (4) and column (5) additionally control for the entrant's IPO quarter and sector fixed effects to absorb unobserved common shocks at the time and industry level. All standard errors are clustered at the entrant and director level to allow correlation among compensations given by the same SPAC and also received by the same director.[8]

Using coefficient estimates from column (5), Figure 7 plots the average marginal effects of $Shares_{incumbent}$ on $Shares_{entrant}$ at different values of $e^{\lambda\tau}$. The solid (dash) line plots for

[8]Results in Table 4 are robust when we cluster standard errors only at the entrant and only at the SPAC level.

the subsample where the competition cost for inducing the director to prioritize the entrant is relatively low (high). It is clear that when the entrant competes with the incumbent, the marginal compensation is larger when the entrant is younger, i.e., when $\tau$ is larger.

## 5.3 DeSPAC Performance

In this section, we conduct an empirical examination of the Implication 3. First, we test the implication from an entrant's point of view: if it finds a target before its connected incumbent, its expected deSPAC performance should be better. Empirically, we estimate the following regression.

$$\begin{aligned}\texttt{DeSPAC Performance}_{i,t} =& \beta_0 + \beta_1 \texttt{N(Incumbents, Announced)}_{i,t} \\ &+ \beta_2 \texttt{N(Incumbents, Searching)}_{i,t} \\ &+ \gamma \texttt{Controls}_{i,t} + \delta_t + \gamma_s + \kappa_s + \epsilon_{i,t}, \end{aligned} \tag{3}$$

where *DeSPAC Performance*$_{i,t}$ measures the SPAC's merger performance, including post-merger returns and redemption rates. *N(Incumbents, Announced)* counts the number of connected incumbent SPACs that found a target before the entrant SPAC, and *N(Incumbents, Searching)* counts the number of connected incumbents that are still searching for targets by the time the entrant announces a target. In addition to the board characteristics, *Controls*$_{i,t}$ also includes the logarithm of the SPAC's total IPO proceeds to control for differences across SPACs of different sizes. In addition, SPACs that are closer to the liquidation deadline may be more desperate to find a target and thus have less bargaining power against the target company in deal negotiations. We control for the number of days to the liquidation deadline using the variable *Days left*. Including the IPO target sector, the merger sector, and time fixed effects conditions out time-invariant differences across SPACs targeting different sectors and those across target companies in different sectors, as well as time-varying factors at the announcement quarter level. We estimate Eq. (3) using ordinary least squares, with robust

standard errors clustered at the target announcement quarter level.

Second, we test the implication from an incumbent's point of view: if an entrant finds a target before it, its expected performance should be worse. Empirically, we estimate the following regression.

$$\begin{aligned}\texttt{DeSPAC Performance}_{i,t} =& \beta_0 + \beta_1 \texttt{N(Entrants, Searching)}_{i,t} \\ &+ \beta_2 \texttt{N(Entrants, Announced)}_{i,t} \\ &+ \gamma \texttt{Controls}_{i,t} + \delta_t + \gamma_s + \kappa_s + \epsilon_{i,t}, \end{aligned} \tag{4}$$

*N(Entrants, Searching)* counts the number of connected entrants that IPOed after the focal SPAC, and *N(Entrants, Announced)* counts the number of those entrants that announced a target before the focal SPAC.

In the first three columns of Table 6, we estimate the post-merger returns. Column (1) shows a positive coefficient on *Incumbent, Searching*, indicating that an entrant's post-merger return is higher when it finds a target before an incumbent to which it connects. Column (2) shows a negative coefficient on *Entrant, Announced*, indicating that an incumbent's post-merger return is significantly diminished when a connected entrant finds a target first. By including all four variables, column (3) accounts for the possibility of role reversal in which an incumbent can become an entrant and vice versa. The directions of the effects are preserved, and the coefficient estimates are slightly reduced. Regarding economics magnitudes, column (3) demonstrates that an entrant's post-merger return is 25.7 percentage points higher when it deSPACs before its connected incumbent, while an incumbent's post-merger return is 68.6 percentage points lower when an entrant that it connects acquires a target first.

Table 6, columns (4)-(6) provide estimation results for redemption rates. Column (4) indicates that an entrant' investors redeem fewer shares when it finds a target before an incumbent that it is connected to. Column (5) shows that an incumbent's investors redeem significantly more when an entrant finds a target before it. When we include all four variables

in column (6), the effects' directions remain unchanged. Regarding economic magnitudes, column (6) demonstrates that entrants face a 10.7 percent lower redemption rate when they find a target before an incumbent. In contrast, an incumbent's investors withdraw 32.6 percentage points more when they discover that an entrant deSPACed before the incumbent they invested in.

# 6 Robustness Checks

## 6.1 Investors' Decisions: Benchmark Effect

The network measures may be merely benchmarks of the SPAC's quality unrelated to the connected director's conflict of interest, such as the quality of the sponsor, the skills of other directors, etc. A superior entrant is more likely to find a high-quality target quickly and thus has a greater chance of deSPACing before an incumbent. If true, the positive correlation between an entrant's deSPAC performance and the number of incumbents still searching for targets at the time of the entrant's target announcement merely reflects the entrant's superior quality. Similarly, due to the incumbent's inferior quality, the negative relationship between its deSPAC performance and the number of entrants finding targets before it may also exist.

However, if the benchmark effect is what drives our results, a SPAC should perform poorly in the deSPAC stage whenever a competitor, whether connected or not, announces a target before the focal SPAC, and perform well when the competitor declares a target after the focal SPAC. We empirically test if the benchmark effect affects our results by constructing

a control variable for each of our network measures and estimate the following regressions,

$$\begin{aligned}\texttt{DeSPAC Performance}_{i,t} =& \beta_0 + \beta_1 \texttt{Network Measures}_{i,t} \\ &+ \beta_2 \texttt{Network Control Measures}_{i,t} \\ &+ \gamma \texttt{Controls}_{i,t} + \delta_t + \gamma_s + \kappa_s + \epsilon_{i,t}, \end{aligned} \tag{5}$$

where *Network Control Measures*$_{i,t}$ are defined similarly as *Network Measures*$_{i,t}$, with the exception that control variables count the number of competitors that do not share any director with the focal SPAC. If our results are driven by the benchmark effect, the network control variables should likewise impact the deSPAC performance.

Table 7 demonstrates that our results are unaffected by benchmark effects. When network control variables are added, the newly estimated impacts of the network variables are fairly comparable to our baseline estimates. Moreover, network control variables themselves have a small and statistically insignificant impact on deSPAC performance.

# 7 Policy Implications

Our paper presents a new conflict of interest that is not addressed by the current rule-making. We use network analysis to show that SPAC directors who sit on several SPAC boards misallocate targets, impose losses on SPAC investors, and increase the likelihood that some SPACs liquidate inefficiently or deSPAC with a low quality target. Moreover, we show both theoretically and empirically that the conflict of interest is endogenous because new SPACs "bribe" directors of existing SPACs to allocate targets inefficiently. A policy that bans concurrent board membership for SPAC board members would both protect the unsophisticated investors and prevent the misallocation of high quality targets.

# 8 Conclusion

SPACs have become one of the major players in bringing private firms public. Private firms can benefit from a fast listing on major stock exchanges by merging with SPACs. In this paper, we show that the board of directors plays a crucial role in SPAC's performance. We document that the same board member can sit on multiple SPAC boards. That creates a conflict of interest because a board member needs to decide which SPAC should get a promising target. The efficient allocation rule is to allocate a target to the SPAC with the highest liquidation risk. We find that directors do not follow this rule. They are more likely to allocate a target to a younger SPAC when they have a higher economic interest in this merger.

Investors are negatively affected by this conflict of interest. We see that the incumbent SPAC's redemption rate is higher, and the returns are significantly lower when an entrant SPAC deSPACs first. However, for the misallocation to take place, it is not sufficient for a director to have more shares in the entrant than in the incumbent because of the higher liquidation risk of the incumbent. Therefore, entrant SPAC's sponsors should compensate conflicted directors for this extra liquidation risk if they want to get the target first. We theoretically and empirically show that when old SPAC directors are not highly compensated, or the liquidation risk is not too high, young SPACs endogenously generate a conflict of interest for these directors. For directors who are already highly compensated or when the liquidation risk is very high, young SPACs prefer to wait for their turn to get a target because competition is too costly.

These results have an important policy implication. Regulators should reconsider allowing board members to sit on multiple SPACs' boards concurrently. SPACs are special because they usually do not introduce any synergy from the merger. Therefore, the competition between them is more severe, and as such, the conflict of interest is especially strong.

Our results can also educate corporate governance regulation beyond SPACs. If board

members sit on the boards of similar companies, the same conflict of interest considerations are likely to play a role in which the company will benefit from the potential M&A opportunity that a board member identifies.

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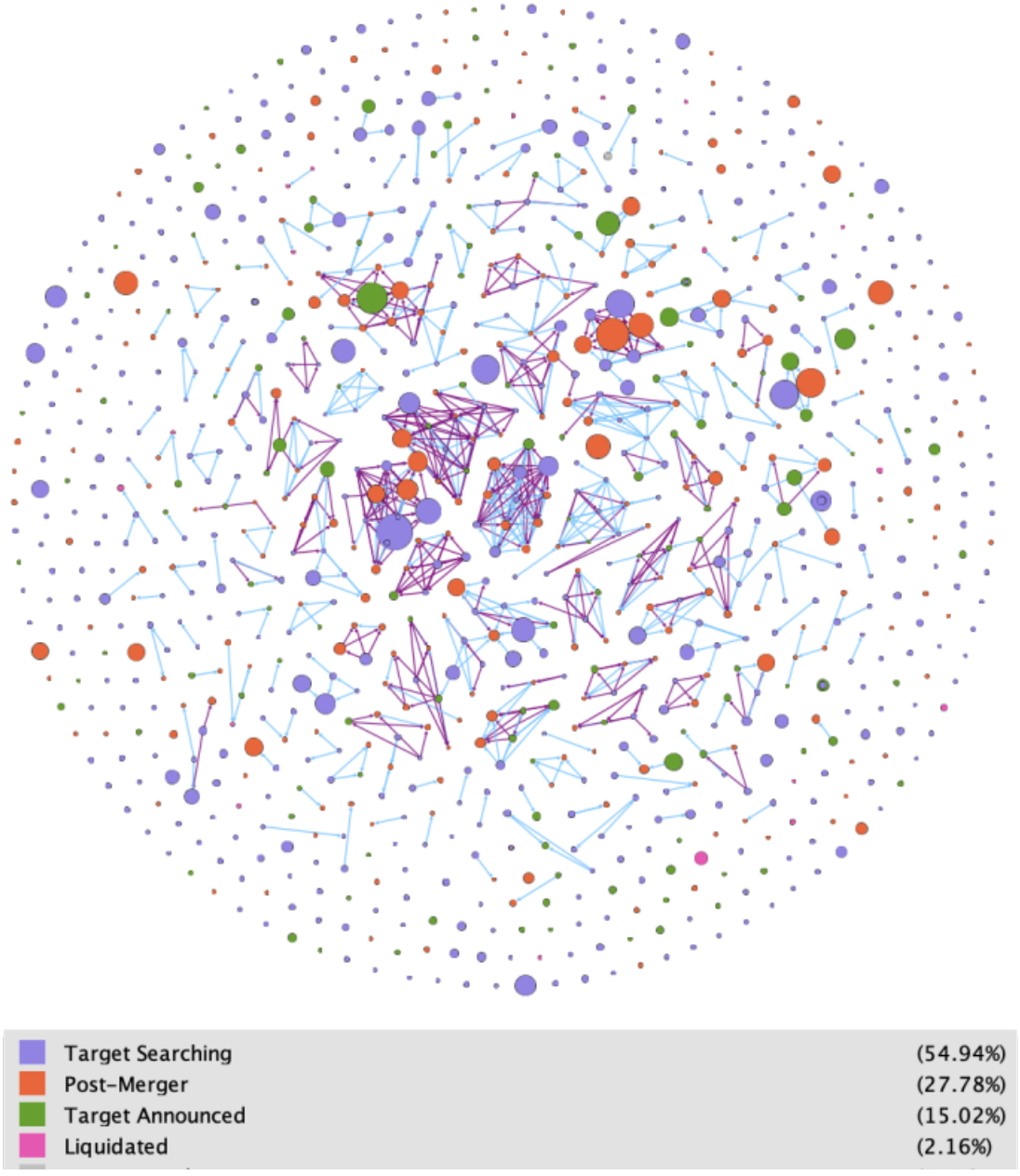
# 9 Figures and Tables

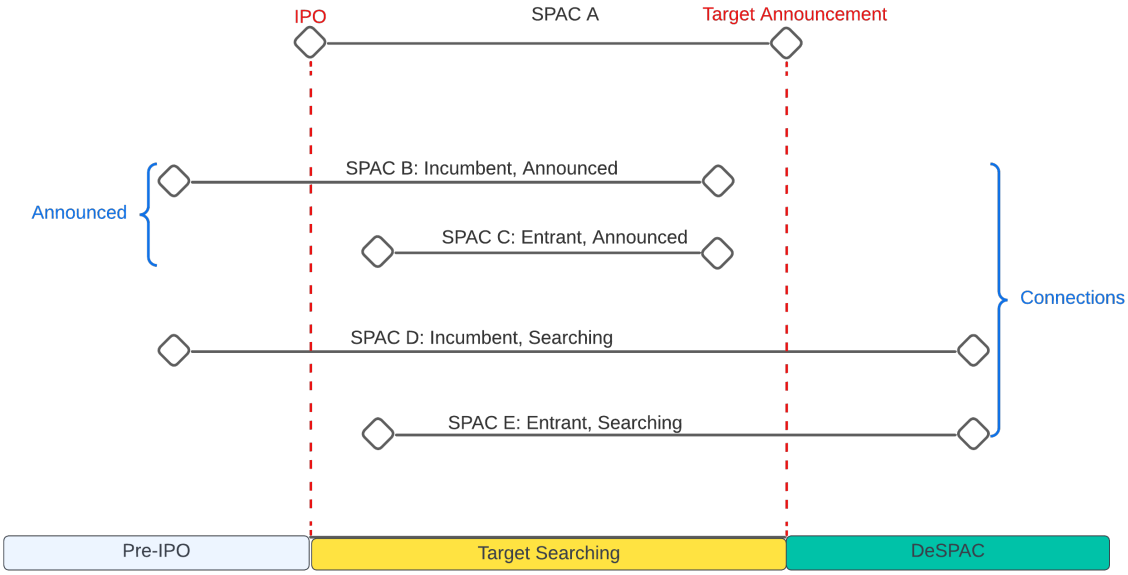
### Figure 5: Network Visualization at December 2021

This figure shows the board interlock network for SPACs that filed original S-1 filings from January 2010 to December 2021. Each node is a SPAC, node size is proportional to the SPAC's IPO proceeds. A SPAC is connected to another SPAC through a board interlock. The more purple the edge is, the more board members are connected.



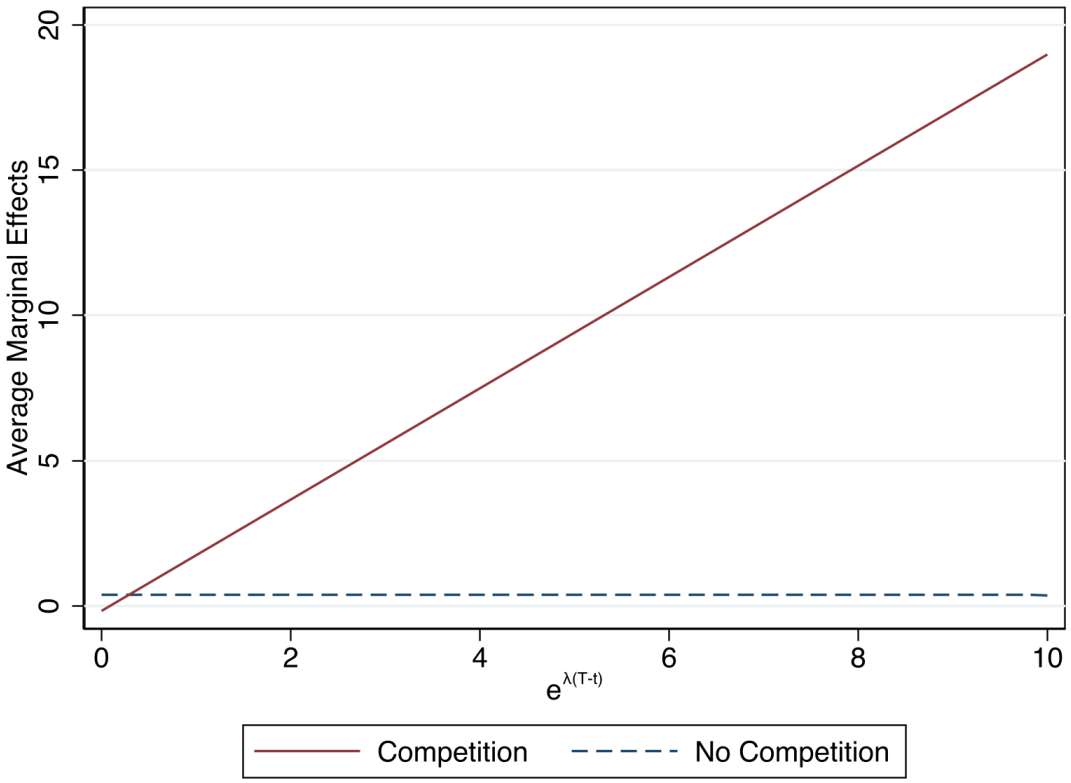
## Figure 6: DeSPAC Network Measures

This figure illustrates different types of board interlock connections formed during a SPAC's target searching period.



## Figure 7: Average Marginal Effects

This figure plots the average marginal effects of the entrant's shares on the incumbent's shares when $e^{\lambda(T-t)}$ is held constant at different values. The dashed line and the dot line plots for the subsamples where the entrant competes and does not compete with the incumbent, respectively, using the full sample. The solid line and the dash-dot line plots for the subsamples where the entrant competes and does not compete with the incumbent, respectively, using the subsample where the director has at least one past connection.



## Table 1: Summary Statistics

This table contains summary statistics for SPACs that went through IPO during January 2010 to December 2021 (Panel A) and (Panel B). All variables are defined in Table A.1.

| | Mean | Std.Dev. | P10 | P50 | P90 | Obs. |
|---|---|---|---|---|---|---|
| **Network Measures** | | | | | | |
| Past Connections | 0.56 | 1.09 | 0.00 | 0.00 | 2.00 | 972 |
| Connections | 0.48 | 0.91 | 0.00 | 0.00 | 2.00 | 704 |
| Announced | 0.07 | 0.29 | 0.00 | 0.00 | 0.00 | 704 |
| Incumbent, Searching | 0.29 | 0.71 | 0.00 | 0.00 | 1.00 | 704 |
| Incumbent, Announced | 0.05 | 0.23 | 0.00 | 0.00 | 0.00 | 704 |
| Entrant, Searching | 0.12 | 0.43 | 0.00 | 0.00 | 0.00 | 704 |
| Entrant, Announced | 0.02 | 0.15 | 0.00 | 0.00 | 0.00 | 704 |
| **SPAC Measures** | | | | | | |
| IPO proceeds (mm USD) | 279 | 227 | 97 | 250 | 460 | 972 |
| IPO base proceeds (mm USD) | 251 | 209 | 85 | 220 | 420 | 972 |
| Overallotment(mm USD) | 29 | 26 | 0 | 25 | 52 | 972 |
| Listing-day return (%) | 1.83 | 3.49 | -0.70 | 0.50 | 6.00 | 840 |
| Redemption(%) | 46.36 | 37.20 | 0.00 | 52.70 | 93.50 | 327 |
| Days left | 392 | 194 | 135 | 402 | 627 | 429 |
| Post-merger Return (%) | 18.30 | 47.08 | -23.53 | 3.22 | 80.95 | 206 |
| **SPAC Board Measures** | | | | | | |
| Board size | 5.41 | 1.40 | 4.00 | 5.00 | 7.00 | 940 |
| #Officer | 1.23 | 1.09 | 0.00 | 1.00 | 3.00 | 940 |
| Average age | 54.38 | 6.34 | 45.93 | 54.71 | 62.41 | 940 |
| %Female | 15.94 | 18.84 | 0.00 | 14.29 | 40.00 | 940 |
| %CEO Public | 16.66 | 17.93 | 0.00 | 16.67 | 40.00 | 932 |
| %Investment Banking | 6.93 | 13.11 | 0.00 | 0.00 | 25.00 | 915 |
| %VC/PE | 13.73 | 17.07 | 0.00 | 0.00 | 40.00 | 915 |
| %JD/MD | 12.50 | 16.79 | 0.00 | 0.00 | 33.33 | 940 |
| %MBA | 37.80 | 23.11 | 0.00 | 40.00 | 66.67 | 940 |
| %Master | 18.83 | 19.04 | 0.00 | 16.67 | 42.86 | 940 |
| %Bachelor | 81.13 | 22.15 | 50.00 | 83.33 | 100.00 | 940 |
| **Panel B: SPAC Pair Sample** | | | | | | |
| $\mathbb{1}\{\text{Entrant}\}$ | 0.60 | 0.49 | 0 | 1 | 1 | 557 |
| $\text{Shares}_{entrant}$ | 0.89 | 2.36 | 0.03 | 0.25 | 1.38 | 557 |
| $\text{Shares}_{incumbent}$ | 1.10 | 3.64 | 0.03 | 0.25 | 1.38 | 557 |
| $\tau$ | 90 | 169 | 0 | 61 | 228 | 557 |
| $\mathbb{1}\{\text{Competition}\}$ | 0.81 | 0.39 | 0 | 1 | 1 | 557 |
| $\text{IPO proceeds}_{entrant}$ | 369 | 306 | 150 | 276 | 563 | 557 |
| $\text{IPO proceeds}_{incumbent}$ | 435 | 365 | 172 | 345 | 690 | 557 |
| $\text{Board size}_{entrant}$ | 5.53 | 1.67 | 4 | 5 | 8 | 557 |
| $\text{Board size}_{incumbent}$ | 5.59 | 1.60 | 4 | 5 | 8 | 557 |

## Table 2: Comparison of Directors

This table compares the mean of characteristics of directors who also sit on another competing SPAC's board at the time of the focal SPAC's IPO (Connected), and the characteristics of the rest directors (Not Connected). *Shares* is the number of founder shares the director receives measured in millions. *Past Connections* is the number of past SPAC deals the director participated before the focal SPAC. All other variables are defined in A.1.

| | Connected | Not Connected | p-value |
|---|---|---|---|
| Shares | 0.69 | 0.33 | 0.000 |
| Past Connections | 1.11 | 0.17 | 0.000 |
| **Biographical Information** | | | |
| Age | 54.23 | 54.87 | 0.271 |
| Female | 0.15 | 0.15 | 0.854 |
| **Educational Background** | | | |
| MBA | 0.43 | 0.34 | 0.001 |
| Bachelor | 0.83 | 0.74 | 0.000 |
| Master | 0.17 | 0.17 | 0.807 |
| JD/MD | 0.11 | 0.11 | 0.733 |
| **Prior Employment** | | | |
| CEO Public | 0.23 | 0.18 | 0.030 |
| Investment Banking(Officer) | 0.31 | 0.18 | 0.000 |
| Investment Banking(Board) | 0.18 | 0.08 | 0.000 |
| VC/PE(Officer) | 0.35 | 0.28 | 0.014 |
| VC/PE(Board) | 0.06 | 0.07 | 0.699 |
| **Current Employment** | | | |
| CEO Public | 0.09 | 0.06 | 0.024 |
| Investment Banking(Officer) | 0.11 | 0.06 | 0.004 |
| Investment Banking(Board) | 0.09 | 0.04 | 0.000 |
| VC/PE(Officer) | 0.60 | 0.38 | 0.000 |
| VC/PE(Board) | 0.22 | 0.13 | 0.000 |
| Obs. | 343 | 5,259 | |

## Table 3: Which Directors Are Conflicted?

This table reports logit regression results of the probability of the SPAC's directors sitting on boards of other competing SPACs. *Past Connections* is the number of past SPAC deals the director participated before the focal SPAC. Robust standard errors are clustered at the director level, and are reported in the parentheses. *, ** and *** denote $p$-values less than 0.1, 0.05 and 0.01, respectively.

| | $\mathbb{1}\{\text{Connected}\}$ | | |
|---|---|---|---|
| | (1) | (2) | (3) |
| Past Connections | 1.058*** | 1.016*** | 0.930*** |
| | (0.077) | (0.069) | (0.070) |
| Age | | -0.018** | -0.015** |
| | | (0.007) | (0.007) |
| Female | | 0.280 | 0.057 |
| | | (0.174) | (0.170) |
| MBA | | 0.252* | 0.206 |
| | | (0.146) | (0.140) |
| JD/MD | | -0.082 | -0.103 |
| | | (0.230) | (0.232) |
| Bachelor | | 0.195 | -0.003 |
| | | (0.279) | (0.214) |
| Master | | 0.260 | 0.200 |
| | | (0.170) | (0.163) |
| **Prior Employment** | | | |
| CEO Public | | 0.063 | 0.152 |
| | | (0.210) | (0.206) |
| Investment Banking(Officer) | | 0.320 | 0.380* |
| | | (0.225) | (0.218) |
| Investment Banking(Board) | | 0.611** | 0.674*** |
| | | (0.242) | (0.247) |
| VC/PE(Officer) | | 0.103 | 0.122 |
| | | (0.185) | (0.181) |
| VC/PE(Board) | | -0.500 | -0.494 |
| | | (0.309) | (0.300) |
| **Current Employment** | | | |
| CEO Public | | 0.475 | 0.337 |
| | | (0.296) | (0.296) |
| Investment Banking(Officer) | | 0.415 | 0.467* |
| | | (0.264) | (0.262) |
| Investment Banking(Board) | | -0.261 | -0.375 |
| | | (0.374) | (0.353) |
| VC/PE(Officer) | | 0.667*** | 0.598*** |
| | | (0.152) | (0.146) |
| VC/PE(Board) | | 0.269 | 0.247 |
| | | (0.205) | (0.206) |
| IPO Quarter Dummies | No | No | Yes |
| Obs. | 5,602 | 5,463 | 4,860 |

## Table 4: Directors' Compensation from Entrants

This table shows regression results on the number of shares the entrant gives the director. $S_I$ and $S_E$ are the number of million shares the director holds in the entrant and the incumbent, respectively. $t$ is the number of days from the entrant's IPO to the incumbent's liquidation deadline. $\tau$ is the number of days from the incumbent's liquidation deadline to the entrant's liquidation deadline. $\mathbb{1}\{Competition\}$ is a dummy variable indicating if the entrant competes with the incumbent. $S_I$ and $S_E$ are winsorized at the $99^{th}$ percentile. Robust standard errors are clustered at the entrant and director level, and reported in the parentheses. *, ** and *** denote $p$-values less than 0.1, 0.05 and 0.01, respectively.

| | $S_E$ | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| $e^{\lambda\tau} \times S_I \times \mathbb{1}\{Competition\}$ | 1.751*** | 1.538** | 1.610** | 1.916** |
| | (0.507) | (0.659) | (0.753) | (0.894) |
| $S_I \times e^{\lambda\tau}$ | -0.000** | -0.000 | -0.000 | -0.000 |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| $S_I \times \mathbb{1}\{Competition\}$ | 0.202 | -0.101 | -0.205 | -0.539 |
| | (0.502) | (0.810) | (0.854) | (1.061) |
| $\mathbb{1}\{Competition\} \times e^{\lambda\tau}$ | -0.126** | -0.183* | -0.269** | -0.285** |
| | (0.063) | (0.096) | (0.109) | (0.122) |
| $S_I$ | 0.392*** | 0.388*** | 0.384*** | 0.372*** |
| | (0.057) | (0.052) | (0.050) | (0.050) |
| $e^{\lambda\tau}$ | 0.000** | 0.000 | 0.000 | 0.000 |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| $\mathbb{1}\{Competition\}$ | -0.216 | 0.076 | 0.230 | 0.183 |
| | (0.171) | (0.225) | (0.241) | (0.254) |
| Board $size_{entrant}$ | | -0.010 | -0.063 | -0.067 |
| | | (0.038) | (0.044) | (0.053) |
| Past Connections | | 0.207 | 0.171 | 0.180 |
| | | (0.147) | (0.144) | (0.147) |
| Director's Characteristics | No | Yes | Yes | Yes |
| Entrant's IPO Quarter FEs | No | No | Yes | Yes |
| Entrant's IPO Sector FEs | No | No | No | Yes |
| Adj. $R^2$ | 0.378 | 0.415 | 0.421 | 0.427 |
| Obs. | 557 | 471 | 469 | 462 |

## Table 5: Probability of Entrant Getting Target Before Incumbent

This table reports logit regression results of the probability of the entrant fighting for a target. $\mathbb{1}\{Entrant\}$ equals one if the entrant finds a target before the incumbent, and 0 otherwise. $Shares_{entrant}$ and $Shares_{incumbent}$ are the number of million shares the director hold in the entrant and in the incumbent, respectively. $(T-t)$ is the number of days difference between the incumbent's liquidation deadline and the entrant's liquidation deadline. $\#Incumbent$ is the number of incumbents. *Past Connections* is the number of past successfully merged SPACs that the director sat on the board. Robust standard errors are clustered at the director level, and are reported in the parentheses. *, ** and *** denote $p$-values less than 0.1, 0.05 and 0.01, respectively.

| | $\mathbb{1}\{$Entrant$\}$ | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| $\text{Shares}_{entrant}$ | 0.039* | 0.058*** | 0.048*** | 0.063*** |
| | (0.023) | (0.022) | (0.018) | (0.022) |
| $\text{Shares}_{incumbent}$ | -0.037* | -0.087*** | -0.104*** | -0.125*** |
| | (0.021) | (0.026) | (0.026) | (0.033) |
| $\tau$ | -0.004*** | -0.004*** | -0.004*** | -0.005*** |
| | (0.001) | (0.001) | (0.002) | (0.002) |
| $\text{Log(IPO proceeds)}_{entrant}$ | | -0.665*** | -0.300 | -0.134 |
| | | (0.240) | (0.256) | (0.300) |
| $\text{Log(IPO proceeds)}_{incumbent}$ | | 0.232 | 0.496 | 0.573* |
| | | (0.280) | (0.323) | (0.328) |
| $\text{Board size}_{entrant}$ | | -0.042 | 0.078 | 0.117 |
| | | (0.116) | (0.140) | (0.154) |
| $\text{Board size}_{incumbent}$ | | -0.257** | -0.392** | -0.661*** |
| | | (0.129) | (0.159) | (0.195) |
| #Incumbent | | 0.739*** | 0.644*** | 0.697*** |
| | | (0.153) | (0.159) | (0.207) |
| Past Connections | | -0.098 | -0.146 | -0.257* |
| | | (0.101) | (0.122) | (0.142) |
| Director's Characteristics | No | Yes | Yes | Yes |
| Entrant's IPO Quarter Dummies | No | No | Yes | Yes |
| Entrant's IPO Sector Dummies | No | No | No | Yes |
| Obs. | 557 | 420 | 391 | 367 |

## Table 6: DeSPAC Performance

This table contains regression results using data on SPACs that went through IPO during January 2010 to December 2021. *N(Incumbent, Announced)* counts the number of connected incumbent SPACs that announced a target before the focal SPAC. *N(Incumbent, Searching)* counts the number of connected incumbent SPACs that were still searching for targets at the focal SPAC's target announcement. *N(Entrant, Searching)* counts the number of connected entrant SPACs that were still searching for targets at the focal SPAC's target announcement. *N(Entrant, Announced)* counts the number of connected entrant SPACs that found targets before the focal SPAC. Robust standard errors are clustered at the quarter level, and are reported in parentheses. *, ** and *** denote $p$-values less than 0.1, 0.05 and 0.01, respectively. All other variables are defined in Table A.1.

| | Post-merger Return(%) | | | Redemption(%) | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Incumbent, Announced | -7.680 | | -3.678 | -0.514 | | 0.523 |
| | (15.853) | | (11.092) | (6.323) | | (6.326) |
| Incumbent, Searching | 31.646*** | | 25.703*** | -11.493*** | | -10.769** |
| | (7.758) | | (5.346) | (3.914) | | (3.829) |
| Entrant, Searching | | 0.674 | 1.138 | | -9.261** | -10.042*** |
| | | (10.634) | (10.322) | | (3.613) | (3.419) |
| Entrant, Announced | | -82.828*** | -68.585*** | | 36.470*** | 32.634*** |
| | | (19.030) | (21.079) | | (9.198) | (8.443) |
| Log(IPO proceeds) | 6.237 | 7.076 | 8.769 | -5.715 | -5.882 | -5.757 |
| | (8.723) | (9.023) | (8.751) | (3.858) | (3.818) | (4.011) |
| Days left | -0.012 | -0.003 | -0.010 | -0.052*** | -0.054** | -0.052** |
| | (0.041) | (0.045) | (0.042) | (0.017) | (0.021) | (0.020) |
| Board Characteristics | Yes | Yes | Yes | Yes | Yes | Yes |
| Merger Sector FEs | Yes | Yes | Yes | Yes | Yes | Yes |
| IPO Sector FEs | Yes | Yes | Yes | Yes | Yes | Yes |
| Quarter FEs | Yes | Yes | Yes | Yes | Yes | Yes |
| Adj. $R^2$ | 0.327 | 0.332 | 0.335 | 0.365 | 0.386 | 0.388 |
| Obs. | 150 | 150 | 150 | 285 | 285 | 285 |

## Table 7: Robustness Checks: Benchmark Effects

This table contains regression results using data on SPACs that went through IPO during January 2010 to December 2021. *N(Incumbent, Announced)* counts the number of connected incumbent SPACs that announced a target before the focal SPAC. *N(Incumbent, Searching)* counts the number of connected incumbent SPACs that were still searching for targets at the focal SPAC's target announcement. *N(Entrant, Searching)* counts the number of connected entrant SPACs that were still searching for targets at the focal SPAC's target announcement. *N(Entrant, Announced)* counts the number of connected entrant SPACs that found targets before the focal SPAC. In addition, we define a control variable for each of the above variables, with the only difference that the other SPAC do NOT share a director with the SPAC. Robust standard errors are clustered at the quarter level, and are reported in parentheses. *, ** and *** denote $p$-values less than 0.1, 0.05 and 0.01, respectively. All other variables are defined in Table A.1.

| | Post-merger Return(%) | | | Redemption(%) | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Incumbent, Announced | -7.850 | | -7.609 | -1.708 | | -0.428 |
| | (15.794) | | (9.600) | (5.553) | | (5.986) |
| Incumbent, Searching | 30.816*** | | 27.974*** | -10.546*** | | -9.256** |
| | (9.199) | | (8.494) | (3.541) | | (3.667) |
| Entrant, Searching | | 2.792 | 3.308 | | -9.610*** | -9.971*** |
| | | (11.904) | (11.114) | | (3.298) | (2.968) |
| Entrant, Announced | | -83.611*** | -62.904*** | | 36.940*** | 31.684*** |
| | | (19.947) | (17.487) | | (8.972) | (9.111) |
| Incumbent, Announced(Control) | -0.102 | | -0.665 | 0.254 | | 0.533** |
| | (0.359) | | (0.702) | (0.182) | | (0.201) |
| Incumbent, Searching(Control) | 0.049 | | 0.307 | 0.022 | | 0.009 |
| | (0.096) | | (0.185) | (0.029) | | (0.042) |
| Entrant, Searching(Control) | | -0.022 | 0.334 | | 0.028 | -0.102 |
| | | (0.167) | (0.319) | | (0.051) | (0.095) |
| Entrant, Announced(Control) | | 0.243 | 0.005 | | -0.069 | 0.197 |
| | | (0.273) | (0.519) | | (0.194) | (0.289) |
| Log(IPO proceeds) | 7.047 | 5.867 | 9.222 | -5.724 | -5.758 | -6.012 |
| | (9.042) | (9.118) | (8.653) | (4.007) | (4.067) | (4.315) |
| Days left | -0.020 | 0.022 | -0.016 | -0.055** | -0.057** | -0.045 |
| | (0.053) | (0.049) | (0.067) | (0.021) | (0.026) | (0.028) |
| Board Characteristics | Yes | Yes | Yes | Yes | Yes | Yes |
| Merger Sector FEs | Yes | Yes | Yes | Yes | Yes | Yes |
| IPO Sector FEs | Yes | Yes | Yes | Yes | Yes | Yes |
| Quarter FEs | Yes | Yes | Yes | Yes | Yes | Yes |
| Adj. $R^2$ | 0.310 | 0.319 | 0.319 | 0.365 | 0.381 | 0.388 |
| Obs. | 150 | 150 | 150 | 285 | 285 | 285 |

# Appendices

## A. Figures and Tables

Table A.1: **Variable Definition**

| Variable | Unit | Definition |
|---|---|---|
| **Network Measures** | | |
| *Connections* | | The number of interlock links where the two SPACs' target searching periods overlap. |
| *Announced* | | The number of *Competitor* links where the other SPAC announced a target before this SPAC. |
| *Incumbent, Announced* | | The number of *Announced* links where the other SPAC IPOed before this SPAC. |
| *Entrant, Announced* | | The number of *Announced* links where the other SPAC IPOed after this SPAC. |
| *Incumbent, Searching* | | The number of *Competition* links where the other SPAC IPOed before this SPAC, and the other SPAC was still searching for a target when this SPAC announced a target. |
| *Incumbent, Searching* | | The number of *Competition* links where the other SPAC IPOed after this SPAC, and the other SPAC was still searching for a target when this SPAC announced a target. |
| *Past Connections* | | Number of past successfully merged SPACs of which that the director sat on the board. |
| **SPAC Measures** | | |
| *IPO proceeds* | Millions USD | Actual gross proceeds raised in the IPO, including any full or partial exercise of the overallotment option. |
| *IPO base proceeds* | Millions USD | Base/minimum (excluding overallotment/Greenshoe) amount the IPO is/was seeking to raise. |
| *Overallotment* | Millions USD | Dollar amount of the overallotment option that is exercised by the Underwriter(s) in the IPO. |
| *Listing-day return* | % | SPAC IPO investors' first-day return. |
| *Redemption* | % | Redeemed SPAC common shares as a percentage of total shares issued at IPO. |
| *Days left* | Day | The number of days between the SPAC's target announcement date and the liquidation deadline. |
| *DeSPACing Return* | % | Percent rate of return from one day before the target announcement to the business closing day. |
| **Board Measures** | | |
| *Board size* | | Number of directors. |
| *#Officer* | | Number of senior officers who do not serve on the board. |
| *Average age* | | Average age of directors. |
| *%Female* | % | Percentage of female directors |
| *%CEO Public* | % | Percentage of directors who is(was) a chief executive officer (CEO) at a public company |
| *%Investment Banking* | % | Percentage of directors who serve(d) on the board of an investment bank. |
| *%VC/PE* | % | Percentage of directors who serve(d) on the board of an venture capital (VC) or private equity (PE) firm. |
| *%JD/MD* | % | Percentage of directors who hold a Juris Doctor (JD) or Doctor of Medicine (MD) degree. |

Continued on next page

Table A.1: **Variable Definition** (Continued)

| Variable | Unit | Definition |
|---|---|---|
| *%MBA* | % | Percentage of directors who hold a Master of Business Administration (MBA) degree. |
| *%Master* | % | Percentage of directors who hold a master's degree. |
| *%Bachelor* | % | Percentage of directors who hold a bachelor's degree. |
| **SPAC Pair Measures** | | |
| $\mathbb{1}\{Entrant\}$ | Dummy | One if the entrant finds a target before the incumbent, 0 otherwise. |
| $Shares_{entrant}$ | Millions | Number of shares the director holds in the entrant SPAC. |
| $Shares_{incumbent}$ | Millions | Number of shares the director holds in the incumbent SPAC. |
| $t_3 - t_2$ | Day | Number of days difference between the incumbent's liquidation deadline and the entrant's liquidation deadline. |
| $\mathbb{1}\{Competition\}$ | Dummy | One if both $Shares_{incumbent}$ and $(t_3 - t_2)$ are below the $90^{th}$ percentile, zero otherwise. |
| $\#Incumbent$ | | Number of incumbents of which the director is sitting on the board. |
| $IPO\ proceeds_{entrant}$ | Millions USD | Actual gross proceeds raised in the entrant's IPO, including any full or partial exercise of the overallotment option. |
| $IPO\ proceeds_{incumbent}$ | Millions USD | Actual gross proceeds raised in the incumbent's IPO, including any full or partial exercise of the overallotment option. |
| $Board\ size_{entrant}$ | | Number of the entrant's directors. |
| $Board\ size_{incumbent}$ | | Number of the incumbent's directors. |
| *Age* | | The director's age at the time of the entrant's IPO. |
| *Female* | Dummy | One if the director is female, and zero otherwise. |
| *CEO Public* | Dummy | One if the director is(was) a chief executive officer (CEO) at a public company. |
| *Investment Banking* | Dummy | One if the director is serving or served on the board of an investment bank.. |
| *VC/PE* | Dummy | One if the director is serving or served on the board of an venture capital (VC) or private equity (PE) firm. |
| *JD/MD* | Dummy | One if the director holds a Juris Doctor (JD) or Doctor of Medicine (MD) degree. |
| *MBA* | Dummy | One if the director holds a Master of Business Administration (MBA) degree. |
| *Master* | Dummy | One if the director holds a master's degree. |
| *Bachelor* | Dummy | One if the director holds a bachelor's degree. |

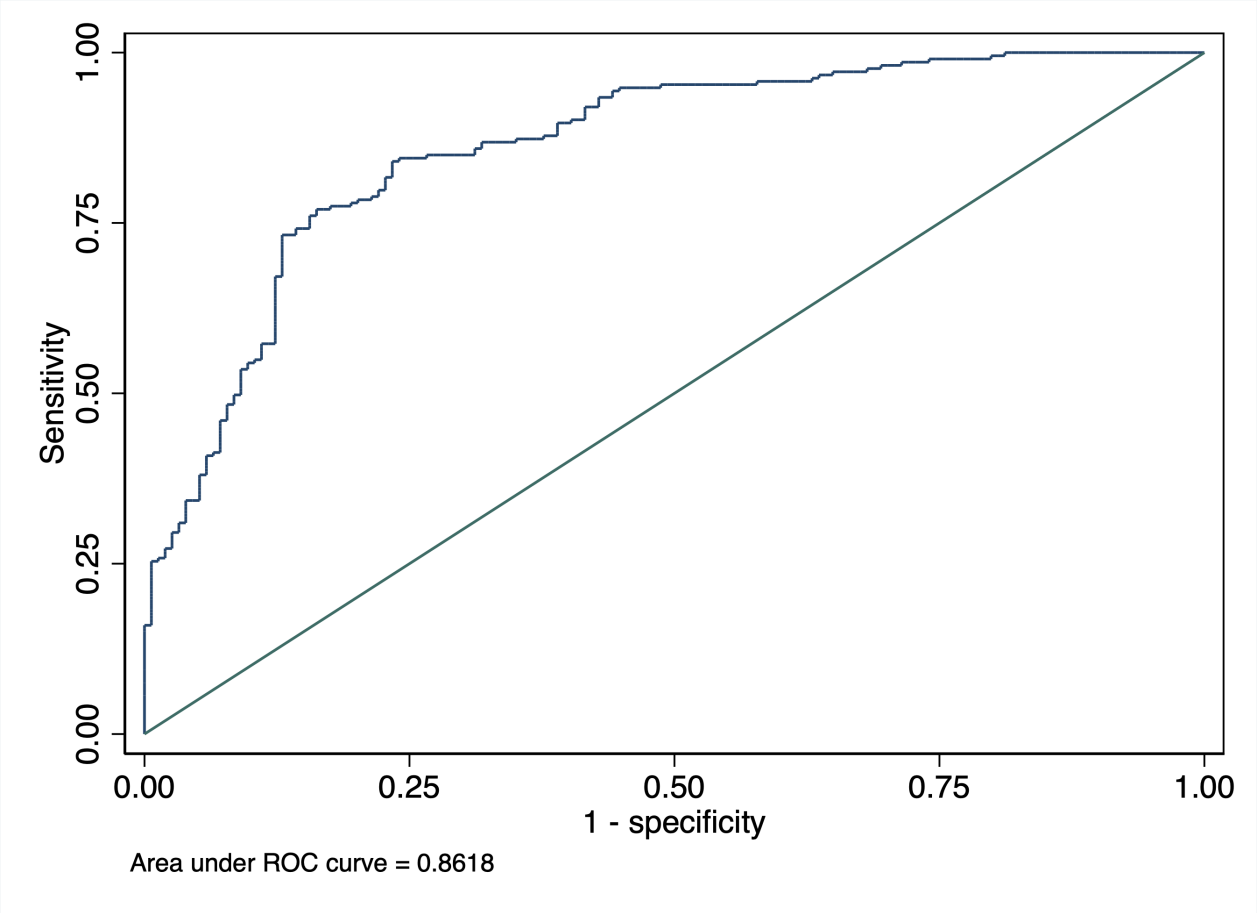
## Table A.2: Jurisdiction of SPACs

This table reports state (if incorporated in the U.S.) or country in which the SPAC is incorporated at the time it consummates it files for its IPO or, if different, consummates its IPO. The SPAC sample contains SPACs IPOed between January 2010 and December 2021.

| Jurisdiction | #Obs. |
|---|---|
| Delaware | 563 |
| Cayman Islands | 368 |
| British Virgin Islands | 33 |
| Marshall Islands | 4 |
| Nevada | 3 |
| Bermuda | 1 |

## Figure A.1: Area Under the ROC Curve

This figure plots the area under the ROC curve for the logit regression specified in Table 5.



## B. Proofs

### Proof of Proposition 1

*Proof.* Let $F_E \geqslant F_I$, we have,

$$S_E + (1 - e^{-\lambda(T-\delta)})S_I \geqslant S_I + (1 - e^{-\lambda(T+\tau-\delta)})S_E$$
$$\Rightarrow S_E \geqslant e^{\lambda\tau} S_I$$

□

### Proof of Proposition 2

*Proof.*

$$\pi_c^0 = [1 - e^{-\lambda\tau}](S - S_E)$$
$$\pi_c^1 = S - S_E$$
$$\pi_c^{2+} = S - S_E$$
$$\pi_{nc}^0 = [1 - e^{-\lambda\tau}](S - S_E)$$
$$\pi_{nc}^1 = [1 - e^{-\lambda\tau}](S - S_E)$$
$$\pi_{nc}^{2+} = S - S_E$$

Let $S_{E,c}^*$ and $S_{E,nc}^*$ be the optimal number of shares the entrant gives to the director when

$S_E \geqslant e^{\lambda\tau} S_I$ and $S_E < e^{\lambda\tau} S_I$. Then let $\pi_c^* \geqslant \pi_{nc}^*$, we have,

$$
\begin{aligned}
&\Pr(n=0)\pi_c^{0*} + \Pr(n=1)\pi_c^{1*} + \Pr(n\geqslant 2)\pi_c^{2+*} \geqslant \Pr(n=0)\pi_{nc}^{0*} + \Pr(n=1)\pi_{nc}^{1*} + \Pr(n\geqslant 2)\pi_{nc}^{2+*} \\
&\Rightarrow \Pr(n=0)[1-e^{-\lambda\tau}](S - S_{E,c}^*) + \Pr(n=1)(S - S_{E,c}^*) + \Pr(n\geqslant 2)(S - S_{E,c}^*) \\
&\geqslant \Pr(n=0)[1-e^{-\lambda\tau}](S - S_{E,nc}^*) + \Pr(n=1)[1-e^{-\lambda\tau}](S - S_{E,nc}^*) + \Pr(n\geqslant 2)(S - S_{E,nc}^*) \\
&\Rightarrow \Pr(n=0)[1-e^{-\lambda\tau}](S_{E,nc}^* - S_{E,c}^*) + \Pr(n=1)(S_{E,nc}^* - S_{E,c}^*) \\
&+ \Pr(n=1)e^{-\lambda\tau}(S - S_{E,nc}^*) + \Pr(n\geqslant 2)(S_{E,nc}^* - S_{E,c}^*) \geqslant 0 \\
&\Rightarrow \Pr(n=1)e^{-\lambda\tau}(S - S_{E,nc}^*) \\
&\geqslant \big(\Pr(n=0)[1-e^{-\lambda\tau}] + \Pr(n=1) + \Pr(n\geqslant 2)\big)(S_{E,c}^* - S_{E,nc}^*)
\end{aligned}
$$

Pluggin in $S_{E,c}^* = e^{\lambda\tau} S_I$ and $S_{E,nc}^* = 0$, we have,

$$
\begin{aligned}
&\Pr(n=1)e^{-\lambda\tau} S \\
&\geqslant \big(\Pr(n=0)[1-e^{-\lambda\tau}] + \Pr(n=1) + \Pr(n\geqslant 2)\big)e^{\lambda\tau} S_I, \\
&\Rightarrow S_I \leqslant \frac{\Pr(n=1)}{\Pr(n=0)[1-e^{-\lambda\tau}] + \Pr(n=1) + \Pr(n\geqslant 2)} e^{-2\lambda\tau} S,
\end{aligned}
$$

where we have,

$$\begin{aligned}
&\Pr(n=0) = e^{-\lambda(T-\tau)} \\
&\Pr(n=1) = \lambda(T-\tau)e^{-\lambda(T-\tau)} \\
&\Pr(n \geqslant 2) = 1 - e^{-\lambda(T-\tau)} - \lambda(T-\tau)e^{-\lambda(T-\tau)} \\
&\Pr(n=0)[1-e^{-\lambda\tau}] + \Pr(n=1) + \Pr(n \geqslant 2) \\
&= \Pr(n=0) + \Pr(n=1) + \Pr(n \geqslant 2) - \Pr(n=0) \times e^{-\lambda\tau} \\
&= 1 - e^{-\lambda(T-\tau)} \times e^{-\lambda\tau} \\
&= 1 - e^{-\lambda T},
\end{aligned}$$

plugging the above equations back, we have,

$$\begin{aligned}
&\pi_c^* \geqslant \pi_{nc}^* \\
&\Rightarrow S_I \leqslant \frac{\lambda(T-\tau)e^{-\lambda(T-\tau)}}{1-e^{-\lambda T}} e^{-2\lambda\tau} S \\
&\Rightarrow S_I \leqslant \frac{\lambda(T-\tau)e^{-\lambda(T+\tau)}}{1-e^{-\lambda T}} S
\end{aligned}$$

□

**Proof of Proposition 3**

*Proof.* First, we study the case that the director's conflict of interest problem does not affect the incumbent, i.e., the director allocates the first available target to the incumbent. In this case, the incumbent's expected post-merger price can be represented as follows,

$$\begin{aligned}
&\mathbb{E}[\text{Post-merger price}|\text{no conflict}] \\
&= \Pr(\text{at least one good target in } [0,T]) \\
&= 1 - e^{-\lambda T}
\end{aligned}$$

Next, we study the case that the director's conflict of interest problem affects the incumbent, i.e., the entrant compensates the director enough shares so that the director allocates the first available target to the entrant if an allocation decision has to be made.

$$
\begin{aligned}
&\mathbb{E}[\text{Post-merger price}|\text{conflict}] \\
&= \Pr(\text{at least one good target in } [0,\tau]) \\
&+ \Pr(\text{no good target in } [0,\tau])\Pr(\text{at least two good targets in } [\tau,T]) \\
&= 1 - e^{-\lambda\tau} + e^{-\lambda\tau}[1 - e^{-\lambda(T-\tau)} - \lambda(T-\tau)e^{-\lambda(T-\tau)}] \\
&= 1 - e^{-\lambda T} - \lambda(T-\tau)e^{-\lambda T}
\end{aligned}
$$

We then take the difference between the two expected post-merger prices and have,

$$
\begin{aligned}
&\mathbb{E}[\text{Post-merger price}|\text{no conflict}] - \mathbb{E}[\text{Post-merger price}|\text{conflict}] \\
&= \lambda(T-\tau)e^{-\lambda T}
\end{aligned}
$$

□